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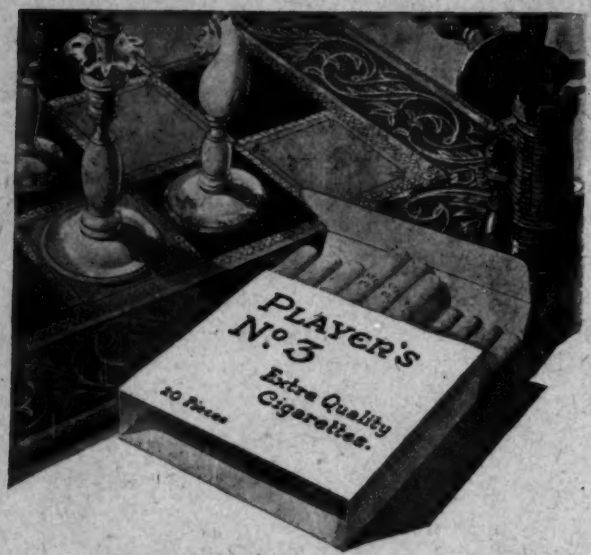

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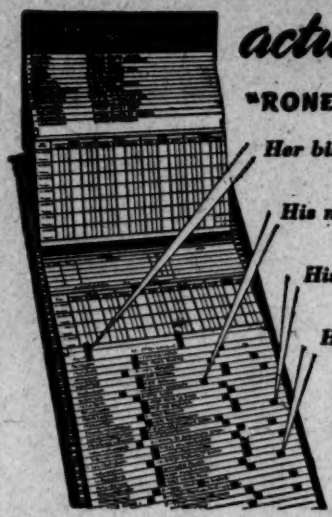

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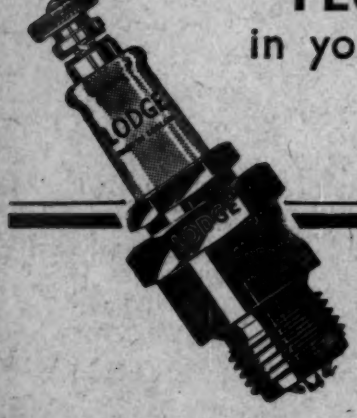

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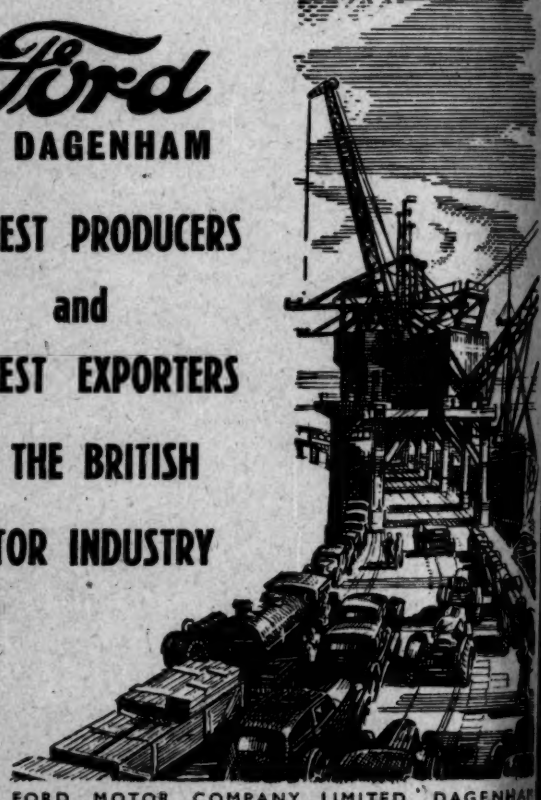

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 13 1948

THE ROLE OF SPECIAL DIETS IN THE TREATMENT OF FEMALE INFECUNDITY

BY

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Infecundity in seemingly healthy women is often associated with infective conditions whose eradication may bring about, or assist in, the restoration of fecundity (Lane Roberts *et al.*, 1948). However, refractory cases of infecundity combined with infective states are common. In these the infection cannot be eliminated either by antibiotics or by other and more drastic procedures; nor do they respond to the more specific methods for the treatment of infecundity. We have noted that this refractory state is particularly common in women aged 30 to 40 who are either distinctly overweight or frankly obese. The combination of overweight with refractory infecundity of this type could not be regarded as fortuitous; for, quite apart from our own observations, previous authors have emphasized the close association between obesity and sterility (Aschner, 1924; Bauer, 1934; McCann, 1934; Siegler, 1944; Guggisberg, 1946) and have advised the use of various reducing diets involving lowered energy intake.

In view of the generally accepted relation between nutritional state and reproductive function we also instituted dietary measures. In our cases, however, the strict rationing involved in the prevailing food situation, and the bacteriological findings, suggested a qualitative change of diet rather than lowered calorie intake only. These dietary measures assisted in the restoration of fecundity in a number of previously refractory cases, and are described below. The present report will be limited, however, to one section of these cases—namely, women in whom the major sterility factor discovered on investigation was cervical dysfunction associated with cervical infection and resulting in non-receptivity to spermatozoa ("cervical block"). This limitation recommended itself to us for several reasons. First, cervical block probably represents the most common immediate "cause" of sterility (Palmer and Palmer, 1945) in women aged 30 and over; secondly, the present investigations were suggested by findings in such cases; thirdly, the general condition of the cervix and its functional state are readily ascertained by precise laboratory and clinical methods (Lamar *et al.*, 1940; Barton and Wiesner, 1945; Clift, 1945; Viergiver and Pommerenke, 1946) so that corrective measures can be readily assessed. Lastly, the state of the cervix, though only one of the factors in genital function, often reflects the state of the reproductive system as a whole. Thus facts relating to cervical responses have a wide validity.

Subjects

The investigations were carried out during 1946–8 and concerned 88 women aged 30 to 40 with a history of primary or secondary sterility; in the latter group are included women who had conceived but aborted. All subjects sought advice because they desired children and not for any clinical complaint. They were women of widely different social status, and included many housewives with arduous duties and some women with outside employment in addition. A few were doing work requiring considerable output of energy (e.g., market gardening).

Minor complaints or deficiencies were common in this series, particularly constipation, mild and transitory rheumatism, dental sepsis, nasopharyngeal catarrh, and subclinical infections of the urinary tract. Nearly all the patients complained of high fatigability and abdominal distension after meals. We have excluded from the present series any case with marked departure from the menstrual norm or with other than diphasic temperature records, or with any severe chronic illness.

Cervical Condition

In all cases the *initial cervical examination* was made during the late follicular phase—that is to say, during the days immediately preceding, and including, the shift of the waking temperature from the low to the high level. At this stage of the cycle the mucus secreted by the fecund woman is abundant and clear, while in the subfecund woman deficiencies of secretion are least pronounced, probably because of the temporary increase in cervical flow at this time. Conditions for invasion by spermatozoa are thus optimal, and failure of invasion at this stage may consequently be regarded as a reliable and definite sign of cervical dysfunction. In many of the cases the volume of the mucous cascade was abnormally reduced, and erosions, small occlusion cysts, or other clinical signs of cervical infection were present. In other cases the macroscopic appearance of the cervix was not demonstrably abnormal. The rheological properties of the cervical mucus, such as fibrosity (capacity to form threads), varied from the normal to the definitely abnormal without any constant relation to the appearance of the cervix. An invasion test was carried out in every case, the cervical mucus being brought into contact with fecund semen under anaerobic conditions according to the standard method (Barton and Wiesner, 1946). As mentioned before, the present group includes only cases of severe impairment of cervical receptivity (complete absence of sperm invasion, or sparse and shallow invasion with rapid inactivation of sperms). In about 70% of the cases the number of exfoliated epithelial cells and of polymorphs, which are scarce in normal ovulatory mucus, was increased, often to a density resembling that normally prevailing in the luteal phase.

The *second cervical examination* was carried out as close as possible to the onset of the next menstruation (late luteal phase). This stage was chosen because our experience has shown that infective and inflammatory processes in the cervix are exacerbated at that stage of the cycle. Pathological processes which may be masked during the follicular phase can thus be recognized, and the identification of pathogens is facilitated. The latter task is of significance in

the treatment of cervical block. It is true that in some such cases no organisms have been demonstrated which could be regarded as pathogenic by any standard. Conversely, not all infections of the cervix produce cervical block. But in the great majority of cases either undoubted pathogens (e.g., coagulase-positive chromogenic staphylococci, *B. proteus*) or organisms suspected of being pathogenic in this site (e.g., coliforms) can be recovered; their nature and their *in vitro* responses determine the choice of antibiotics. Furthermore, culture of the cervical mucus is essential in order to distinguish between infective and non-infective cervical block—a distinction which cannot be made by any other means.

During the pre-menstrual examination the cervix was exposed with the appropriate precautions against contamination (cf. Kuester, 1929; Hite *et al.*, 1947) and a loopful of cervical mucus, obtained after thorough dry swabbing from just within the external os, was planted out on warmed blood-agar slopes. Additional inocula on other media were made as required. The inocula were submitted without delay to the laboratory. In view of the great variety of organisms that may infect the cervix detailed bacteriological examination was carried out.*

The present series includes only cases in which pathogens or suspected pathogens were recovered, but excludes cases of Neisserian infection. The findings are illustrated by the results in 25 successive cases (Table I). This table

TABLE I.—*Showing the Presumptive Pathogens Recovered from the Cervix in 25 Successive Cases of the Series. Reference to Presumptive Non-pathogens Commonly Recovered (e.g., Staph. albus; diphtheroids) is omitted*

Case	*B. coli*	*B. proteus*	Chromogenic Staphylococci	*Streptococcus faecalis*	*Streptococcus viridans*	Other Streptococci (incl. Haemolytic)	Pneumococci	Other Organisms
1					++++			
2	++							Cl. Welchii ++
3	+					+		
4	++++	++						
5							+	
6	+					+		
7	+							
8	++	+					+	
9						+	+	
10			+			+		
11	+	+						
12	++							
13	+			+				Fusiforms
14						+	+	
15	+	+			+			
16	+	+		+				
17	++							
18	+		++					
19	+++	+				+		
20	++					+	+	
21	+							
22	+	+	+					
23			++					
24	+++							
25	+++	+++						

does not include the full variety of organisms recovered on culture, but it shows the predominance of infection by coliform organisms. In view of the precautions taken against contamination and of the heavy growth usually obtained, the cultures probably reflect the true flora, though not necessarily the whole flora, of the blocked cervix in these cases. It is of course impossible to ensure that the loop will not in any circumstances take up organisms from the border between cervical and vaginal epithelium. The term "cervical flora" is thus subject to qualifications imposed by the technique. But while in some cases the vaginal films and vaginal inocula showed an atypical vaginal flora, the pathogens cultured from the cervix were not generally also found in the vagina, and vice versa. Thus coliform organisms are sometimes recovered from the cervix and even the urine, but not from the vaginal wall proper. It must also be added that an abnormal cervical flora may vary from cycle to cycle even to the extent of one pathogen being replaced by another without manifest cause.

*The bacteriological routine procedure employed anaerobic culture for 48 hours, followed by aerobic conditions for, usually, 18 hours at 37° C. At this stage it was decided, from the colonial characteristics and the Gram films of the primary culture, what further information was necessary to arrive at the true state of the cervical flora, and subcultures of colonies requiring identification were made on the appropriate media. MacConkey's medium and SS (as an enrichment medium) were generally used to identify genuine non-lactose-fermenters and were followed by the carbohydrates for two or three days for final confirmation. Nutrient agar was used for growing suspected genuine chromogenics such as *Staph. aureus* for the coagulase test; and *Ps. pyocyanea* is also easily identified by this means. Sensitivity tests with antibiotics were carried out in the appropriate subcultures.

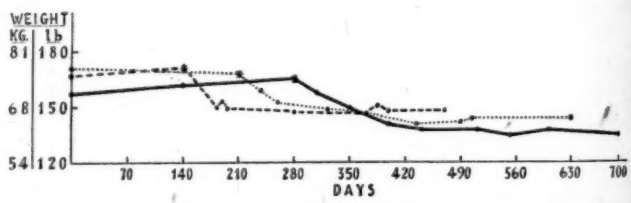
Response to Antibiotics and Oestrogens

Impaired cervical receptivity that is combined with infection often responds to the administration of oestrogens, which stimulate cervical secretion and condition its receptivity for spermatozoa, provided that infection is first dealt with by suitable treatment—e.g., sulphonamides, penicillin, or other antibiotics used locally or systemically or both. The response is usually manifested not only in the favourable results of the invasion or post-coital tests, but also in the macroscopic appearance of the cervical flow. This becomes abundant and transparent, with reduced diapedesis of leucocytes.

The present cases were characterized by the absence of this response or by a partial response only. Notwithstanding the administration of antibiotics and oestrone (1.5 to 3 mg. in microcrystalline suspension per week for four to twelve successive weeks) the mucous flow remained scanty, or else it increased without becoming receptive for sperms. Again, pathogens could be recovered at any time during or after the treatment with antibiotics. Some of these cases had previously received local treatment for cervicitis, including cautery, with varying response of the local lesion but with persistence of cervical block.

Body Weight

As stated above, the present group is composed entirely of cases showing distinct overweight—i.e., more than 10% above the mean weight for age and height. The degree of adiposity varied widely (see Graph). In the pronounced



Graph showing changes in body weight under treatment. (The asterisk denotes date of commencement of diet.)
———: Woman aged 32; height, 5 ft. 2 in. (157.5 cm.). *B. coli* infection of the cervix. Lactose diet (Group I).
. . . . . : Woman aged 31; height, 5 ft. 3 in. (160 cm.). *B. coli* infection of cervix combined with vaginitis (mixed infection, including *Trichomonas*). Simple sugar-free diet (Group II).
– – – – : Woman aged 32; height, 5 ft. 3 in. (160 cm.). *B. proteus* infection of cervix. Supplemented by sugar-free diet (Group III).

cases adiposity—if the term may be used without prejudging the nature of the deposits—was most marked in the subscapular region, the waist, and the thighs. In the frankly obese women no specific distribution could be noted.

Therapeutic Methods and Results

In refractory cases it was at first intended to employ recognized and well-tried reducing diets involving severe restriction of calorie intake or to adjust the salt balance, but most patients were working too hard to be easily placed

on a severe reducing diet, nor could they spare the time for treatment in hospital. Most of them could not afford to purchase much unrationed protein, and it certainly did not seem safe to lower fat consumption below that provided by the rations. A different approach, suggested by the predominance of infections by organisms of intestinal type, was therefore chosen—namely, an attempt to reorganize the intestinal flora. This form of therapy has been widely advocated by previous workers for many different conditions, including genital infection. Three specific procedures were used in successive groups of patients.

Group I (Lactose Group)

The first method chosen (14 cases) was *the administration of lactose* (Lactose B.P., 3 oz. (85 g.) daily); for numerous investigators have agreed that this sugar, administered in comparatively small quantities, assists in the establishment of a favourable intestinal flora (for bibliography, see Robinson and Duncan, 1931; Robinson and Gilliand, 1937; Koehler and Allen, 1934; Koehler, Rapp, and Hill, 1935; Webb and Whittier, 1948; Rojas *et al.*, 1948); and has only mild side-effects, such as slight laxative and diuretic action (Hunt, 1931; Koehler, Rapp, and Hill, 1935). With the intention of enhancing the reputed action of lactose, ordinary sugar (sucrose), as the most ready source of fermentable carbohydrate, was eliminated from the diet. An additional reason for the experimental elimination of sugar and its replacement by lactose was supplied by the results of experiments in rats carried out by Whittier *et al.* in 1935. They placed paired groups of rats on diets containing lactose and sucrose respectively and found that the lactose diet prolonged the span of life compared with the sucrose diet; furthermore, the sucrose-fed animals developed significantly larger deposits of fat than those receiving lactose. It seemed possible that not only was lactose beneficial—as claimed by various observers—but also that sucrose was actively deleterious by promoting abnormal adiposity.

All our subjects, therefore, were instructed to avoid rigidly any article of food or drink containing sugar (biscuits, cake, puddings, sweets, etc.), and not to add sugar to food or drinks. Glucose and syrup were not allowed either. No restrictions were placed upon other foods, whether rich in carbohydrates or not; and the subjects were told to still hunger by eating more of permitted foods (e.g., bread, potatoes, etc.) than they did before being placed on the diet. The only medicament advised was mucilage where necessary to promote bowel action.

All subjects found the diet difficult to observe during the first few days and meals unsatisfying, but no ill effects upon working capacity were reported. Abdominal distension generally disappeared and subjective energy increased. Marked losses in weight occurred in all but three women of this group, the loss becoming apparent within one week of beginning the regime. The average loss was about 1 lb. (450 g.) per week, and the rate of loss was not clearly related to the initial weight. Weight continued to fall until a level approximately corresponding to the mean weight for age and height was attained. In some cases the weight remained stationary rather above this level in spite of the continuation of the diet.

The lactose diet was continued for at least four weeks before further steps were taken, re-examination being carried out in the second cycle after starting the regime and being repeated as required. In three cases spontaneous recovery of the cervix, with positive invasion tests, was then noted; but the dietary regime alone did not, as a rule, entirely restore cervical function even when body weight was much reduced.

Where invasion continued to be impaired (i.e., in all but three cases) treatment with antibiotics and oestrone was now resumed, the diet being continued and the procedure being in all essentials a repetition of that previously used without success. It was then that entirely different responses were recorded in a further six women, all of whom had shown loss of weight. The mucus assumed normal volume, transparency, and invadability in these cases; epithelial lesions healed without further intervention and without relapse in subsequent cycles. Conception occurred in four women, but male fecundity varied so much in this series that the conception rate does not reflect the response as adequately as does the occurrence of a positive invasion test. Cervical recovery failed to occur in five cases, three of which had shown no significant reduction of weight.

Group II (Sugar-free Diet Without Lactose)

The second method chosen (65 cases) differed from the first solely in the omission of lactose; the subjects were simply placed on a "sugar-free" diet. All other instructions and procedures were precisely the same as in Group I. This regime was originally chosen to ascertain whether administration of lactose was an essential factor in the treatment of refractory cervical block.

The results showed unequivocally that lactose was *not* necessary for the desired results, and the group was then expanded. The sequence and rate of responses (reduction of weight; restoration of cervical function under repeat treatment with antibiotics and oestrone) resembled that in Group I so closely that no detailed description is needed. Cervical block was removed in 45 cases; conception occurred in 24; but, as in all such series, the conception rate is not an adequate measure of female fecundity, and the series includes cases in which treatment was but recently concluded. Incidental subjective responses (relief from post-prandial distension; decreased fatigability) occurred in this group as in the first, and in several cases infections of the urinary tract disappeared together with the cervical block. In this series there were several cases in which distinct cervical improvement took place under dietary regime alone. There were two cases in which no loss of weight occurred but the cervix responded to repeat treatment; in other responsive cases loss of weight had taken place. There were 18 failures (see Table II).

Table II

Dietary Group	No. of Cases	Cases Showing Loss of Weight		Cases Showing No Loss of Weight	
		With Cervical Response	Without Cervical Response	With Cervical Response	Without Cervical Response
I. Lactose group (sucrose-free) ..	14	9	2	—	3
II. Sucrose-free group (without lactose) ..	65	45	12	2	6
III. Supplemented sucrose-free group	9	6	—	—	3

Group III (Supplemented Sugar-free Diet)

In the present circumstances sugared foods supply a large proportion of the total energy intake of our subjects. Conversely, their elimination from the diet involves a severe reduction in energy intake unless it is balanced by increased consumption of unsugared foods. Most of the subjects in Groups I and II clearly compensated themselves by such adjustments. Hence it seemed that reduction in weight and restoration of fecundity could occur without significant reduction of energy intake. But it seemed desirable to test this conclusion by specifically prescribing to a number of subjects a sugar-free diet which did not involve for any case a decreased calorie intake and for most cases in fact procured a significant increase.

The composition of the diet in this group (9 cases) was dictated, first, by our intention to provide a diet which in certain experimental animals, and so far as is known in man, is adequate for maintenance *and for reproduction* (whole grain, milk); secondly, by the limited variety and quantity of foods available to patients with small incomes; thirdly, by the need to avoid additional work—i.e., in procuring or preparing food.

The diet prescribed *excluded* (1) all foods containing sugar, as in Groups I and II; (2) breakfast cereals and other foods prepared by toasting. It *included* explicitly all rationed foods except sugar: bread (85% extraction), oatmeal, unrationed vegetable oil, fruit, fish, potatoes, and yoghourt, which is unrationed and available to anyone living in London. The subjects were instructed concerning the purpose of the regime. Although, with few exceptions, they were not asked to weigh their food or to adhere to specific menus, they were clearly told the approximate minimal quantities which they were to consume per day.

The general and the cervical responses resembled those seen in Groups I and II. Loss of weight occurred at about the same rate as in those two groups. In three patients the weight

remained almost constant. Cervical function was restored in six who had lost weight, and conceptions have occurred so far in two. This group, like Group II, contains a number of recent cases, so that the incidence of conception cannot yet be assessed.

As stated, the energy intake of several women of Group III was higher during the regime than before. Increased intake, in spite of the exclusion of sugar, was facilitated by the peculiar food habits not uncommon in obese women. Before treatment they ate no potatoes, hardly any bread, and very little fat—all foods which they believed to be fattening. Being childless, they did, however, consume their own (and sometimes their husband's) sweet rations, and quantities of cakes, biscuits, stewed fruits, etc. Furthermore, they did not bother to prepare meals for themselves when their husbands were out, so that their "elevenses," lunches, and teas consisted quite often of a cup of tea or coffee with a slice of cake. When they were taken off sugared foods and ordered to eat bread, oil in addition to their fat ration, oatmeal porridge, yoghourt, and so on, they more than made up for energy intake surrendered with sugared foods. The subjects were not in hospital, so precise figures concerning calorie intake cannot be submitted; but in Table III gain and loss of energy intake are shown relating to a particular subject. From this it will be seen that *in this clinical condition* and in the prevailing food situation an increased calorie intake is compatible with a significant decrease in weight and an increased chance of recovery from cervical block.

TABLE III.—*Showing Loss of Energy Intake through Exclusion of Sugared Foods by a Subject of Group III, together with Energy Intake from Additional Foods Prescribed to Balance this Loss**

A. Loss per Week through Exclusion of Sugared Foods	
Sugar (8 oz.: 227 g.)	860 cal.†
Cake (purchased) (28 oz.: 794 g.)	2,800 ,,
Biscuits (16 oz.: 454 g.)	2,176 ,,
Jam (8 oz.: 227 g.)	560 ,,
Sweets (3 oz.: 85 g.)	450 ,,
Flour used in puddings (about 7 oz.: 200 g.)	680 ,,
Total	7,526 cal.
B. Gain per Week from Prescribed Minimum Intake of Specified Foods	
Oatmeal (14 oz.: 397 g.), taken as porridge and girdle cakes	1,400 cal.
Yoghourt (14 bottles, estimated at about 100 cal. each)	1,400 ,,
Additional bread (28 oz.: 794 g.)	1,960 ,,
Potatoes (3 lb.: 1·36 kg.)	2,700 ,,
Vegetable oil (20 fl. oz.: 568 ml.) taken in salads and for cooking	5,100 ,,
Total	12,560 cal.
Positive balance, per week, 5,034 cal.	

* The figures do not take into consideration meat, fish, cheese, and other foods which were not significantly affected by the regime; nor do they reflect increased consumption of fruit and vegetables. The figures relate to the average consumption during a period of three weeks at the beginning of the regime. The subject, aged 32 years, height 5 ft. 3 in. (160 cm.), weight 157 lb. (71·2 kg.), lost 6½lb. (2·7 kg.) during this period.
† Calorie values obtained from "Nutritive Values of Wartime Foods," Med. Res. Coun. War Mem. No. 14, London, 1945.

Supplementary Notes and Discussion

1. *Control Data.*—Two groups of control data for the present series are available. First, the cases were unsuccessfully treated by oestrone, antibiotics, and sometimes local applications before institution of the diet. Experience shows that mere repetition of such treatment after an interval, and without intervening measures, rarely brings about success if it has failed the first time. The cases thus constitute their own controls. Secondly, properly organized therapeutic measures could not be instituted, or were interrupted for incidental reasons, in 9 patients. When these were seen again after intervals varying from two to six months restoration of cervical function was noted in but one case. Rapid spontaneous recovery without change in environment thus being rare, the regime appears to have contributed materially to the restoration of cervical function.

2. *Alterative Effect of Diet.*—Previous workers found that infecundity in overweight women responds well to reduction of weight by decreased energy intake, by treatment for fluid retention, or by both. In our cases, too, the effect seems to be related to loss of weight. However, we avoided any attempt to procure a negative energy balance. In some patients energy intake was possibly decreased simply by withholding sugared foods; in others, however, intake was not sensibly reduced, or was even raised. Nor did the patients produce a negative energy balance by increased exercise. In fact, in some of them the amount of work was deliberately reduced; for we are under the impression that such reduction, by imposed periods of rest, promotes recovery in women of this age group who have been exposed to continuous or excessive physical strain. It may thus be deduced that in such cases loss of body weight was due to a change in metabolism.

3. *Metabolic State and Infective Process.*—This alterative effect may be responsible for the subsequent response to treatment. It is uncertain whether the response was related to an increase in general resistance or to a more specific action, or both; certainly general improvement in health occurred in many instances during the dietary regime. Resistance to infection is of course known to depend on nutritional conditions (Cannon, 1942; White, quoted by Duncan, 1947), and is lowered by specific metabolic disturbances (e.g., diabetes mellitus). But while alteration in the rate or the nature of metabolism appears to have favourably affected the infective process the connexion between infection and metabolic state in these cases cannot be regarded as a one-way relationship. Thus we have noted that the resumed treatment of the infection while maintaining the diet often accelerates reduction of body weight. Furthermore, the case histories show that increase in weight, and even rapid development of obesity, often dated from, or followed upon, the first signs of genital infection or the infection of the urinary tract which not infrequently precedes cervicitis. The data are compatible with the suggestion that metabolic disturbances resulting in overweight and infective conditions of the type described are subject to mutual enhancement whatever the mode of origin may be.

4. *Metabolic State and Response to Oestrogens.*—The restoration of cervical response to oestrogens may not represent an independent effect of metabolic changes but merely reflect the elimination of the infection. This interpretation suggests itself not only in view of previous findings already referred to but also because of other observations (unpublished). These show that in infecund women the reactivity to sex hormones (measured, for example, by uterine response to oestrogens and by endometrial or thermal response to progesterone) may be impaired by unspecific infections even if these are not localized in the reproductive system. Also pyometra, which commonly develops in aged rats, is often associated with suppression of vaginal response to oestrogens; the response may be restored by hysterectomy. It should be recalled, too, that the response to another hormone—namely, insulin—may be impaired by infective conditions.

5. *Role of Sugared Foods.*—The only common factor in the three diets we employed was the exclusion of sucrose (with the exception of that occurring naturally in fresh fruit), and we are inclined to regard this as the essential factor. It seems likely that the high intake of sugared foods adversely affected metabolism either directly or indirectly (e.g.—through promoting an unbalanced intestinal flora). The suspected effect of sugar may of course be conditioned by the form in which it is taken and which determines its availability for intestinal agents, and may be related to the diet as a whole (e.g., to the protein–carbohydrate ratio).

6. *Effect of Crude Sugar.*—It seemed also possible that the adverse effect of sugared foods depended upon the use of highly processed sucrose, but the lactose used was also highly processed, yet it appeared to be harmless. Furthermore, 12 women were placed on a diet corresponding to that of Group II but received about 12 oz. (340 g.) of crude cane sugar per week. This diet did not evoke any loss of

weight or other response. Sugared foods were then entirely excluded from the diet, and the usual response occurred in these cases. The data, so far, certainly do not suggest that highly processed sugar is any better than the crude substance.

7. *Age Factor.*—The relationship between refractory infective conditions, metabolic state, and response to oestrogens is further complicated by an age factor, the threefold disturbance being comparatively less common in infecund women under 30: its incidence seems to rise, like that of obesity in general, during the fourth decade of life. The complex here discussed represents one of the modes by which fecundity declines.

8. *General Notes.*—The use of sugar-free diets is not suggested for cases of obesity in general, for our experience is entirely limited to infecund women in the reproductive phase of life. Also, the syndrome involving refractory genital infection, overweight, and lack of response to hormones may be determined by specific and topical conditions such as the prevailing food restrictions combined with the demand made upon the physical resources of women in this country during the past years. Nevertheless, we are submitting our findings because the dietary measures described have been of great practical assistance to us in our work; and in recent months dietary measures have been employed in every suitable case from the very beginning of treatment in order to save time.

Summary

Refractory cervical block is a common cause of infecundity in overweight women aged 30 to 40. It tends to respond to treatment by antibiotics and oestrogens if loss of weight is first procured by dietary measures. Suitable diets which do not interfere with the routine of the subjects are described. Their main characteristic is the exclusion of sucrose, with concomitant increase in other foods chosen to produce a diet adequate for maintenance and reproduction within the limitations imposed by rationing.

The bacteriological investigations for the present series were carried out by Dr. R. C. Matson, pathologist, Royal Surrey County Hospital, Guildford, to whom our thanks are due for help and advice on many occasions. His routine procedure is summarized in the footnote. We are also indebted to Mr. A. L. Bacharach for discussion of nutritional aspects of this investigation, and to the Scientific Adviser, Ministry of Food, for supplying crude cane-sugar for issue to subjects.

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THE BIOLOGICAL ASPECT IN TREATMENT OF THE INFERTILE MARRIAGE

BY

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At the present day, when so many women seek advice with reference to the infertility of their marriages and so much investigation is carried out in an attempt to elucidate the causes, the criticism might be offered that most of our energies are spent in investigation and little in treatment. Nevertheless, many of our lines of investigation seem to have a direct curative value—as, for example, it would appear to be established that the performance of a tubal patency test has a curative as well as a diagnostic value: Green-Armytage (1943) has recorded a 43% success rate following the simple process of salpingography. It is not clear how this process achieves these results, but speculation upon figures quoted suggests that there is a direct relationship between the two. So many cases of immediate pregnancy following upon the simple procedure of endometrial biopsy have been reported that it is impossible to avoid the conclusion that here also the results are not merely accidental.

Reviewing treatment from the time-honoured method of dilatation of the cervix and curettage to the present-day methods of demonstrating tubal patency (salpingography and insufflation) and the surgical procedures of salpingostomy, it is at once apparent that most of our means of approach are mechanical. This is what might be expected in the present mechanical age and from the fact that the problem of the infertile marriage occupies the minds of surgeons rather than physicians.

Now that the role of the hormones of human gestation is becoming clearer and the endocrinologists are turning their attention to the problem, it is likely that the pendulum will swing a little away from the mechanical aspect towards the medical and biological side.

Four Important Questions

In investigating an infertile marriage we are concerned with four major questions: (1) The husband, his potency and the quality of his semen. (2) Ovulation. (3) The pathway which the sperms traverse to reach the ovum; and here we may consider two subdivisions—(*a*) the cervix and the influence of its secretions on sperm migration; (*b*) the Fallopian tubes. (4) Nidation or embedding of the ovum. In my opinion, the importance of nidation of the ovum has not been sufficiently stressed, and treatment based upon the assumption that many cases of infertility result from difficulty experienced by the ovum in embedding itself in the endometrium has proved to be successful in an appreciable number of my cases.

Since treatment based on the assumption of faulty nidation is purely medical and can be carried out with little inconvenience to the patient, it has gradually become my practice of recent years to initiate medical treatment aimed at securing firm implantation of the ovum in practically every patient who consults me with reference to infertility and in whom there is no gross pathology. Medical treatment can be undertaken while the patient is awaiting the propitious moment for such tests as the post-coital test, endometrial biopsy, and the tubal patency test and while the husband is being investigated by a seminologist.

Under such treatment it is surprising how often the completion of these tests is not necessary because the patient has become pregnant in the interim. Occasionally, of course, at the first examination one finds some definite and likely cause for infertility which calls for specific treatment, but more frequently no gross cause is discovered. In these latter cases treatment aimed at securing firm nidation can be started at once. In most of the patients nowadays, apart from performing a post-coital test, I like to give a trial period of two or three months under medical treatment before further investigations are undertaken.

Most authorities agree that the ovum, after fertilization, takes several days to traverse the Fallopian tubes and reach the uterus, the endometrium of which should be prepared to receive it—that is, it should be in the secretory phase, having responded to the hormones elaborated by the corpus luteum. An extended experience of endometrial biopsies taken just before the onset of a period has led me, however, to appreciate that all endometria do not show the same degree of preparation. Whether this is due to a deficient action of the corpus luteum or, as Bourne (1947) suggests, to lack of a receptive factor in the endometrium rendering it unresponsive to a normal hormonal stimulus must await further work on the subject. The fact remains that a good number of women produce an endometrium which, by our gross methods of assessment, would appear to be inadequately prepared as a nesting-ground for the fertilized egg.

A Plan of Treatment

Basing treatment upon this evidence, I advise my patients to adopt the following plan:

1. To concentrate intercourse on their fertile dates, which can be calculated for them either mathematically as occurring on the 16th, 15th, or 14th day prior to the anticipated onset of a period (in a woman with a 28-day cycle these days will be the 12th, 13th, and 14th days from the first day of the last period), or, more accurately, by instructing them to assess the days by the early-morning temperature method.

2. To abstain from intercourse for a week or ten days prior to these fertile days, which in practice amounts to abstaining from the first day of a period until the fertile days.

3. To take from the first fertile day 0.6 mg. of "dienoestrol" and 10 mg. of "ethisterone" daily.

4. To continue to take these hormones until the onset of the next period, when they are discontinued, since obviously the onset of a period indicates that on this occasion the attempt to aid nidation has failed. Should the period not start, the patients continue with these hormones daily until the 18th week of the pregnancy.

It should be noted that the administration of these hormones may delay the onset of the period by a few days even in the absence of pregnancy, but not longer. I quote the results of this treatment in 111 patients, in not one of whom could I discover any apparent cause for infertility by ordinary clinical examination. All of them had been sterile for more than two years, and 87 of them for periods varying between 3 and 10 years.

TABLE I.—*Cases in which there had been no Previous Pregnancies*

Total number of cases		111
Failures	73 (65·8%)	
Successes	38 (34·2%)	
Analysis of failures:		
Certain failures	37	
No reply to letters of inquiry	36	
Analysis of successes:		
Pregnant in one month	13 (11·7%)	
„ „ two months	4 (3·6%)	
„ „ three months	6 (5·4%)	
„ „ six months	15 (13·5%)	
Number of miscarriages	3	

It will be seen that within six months, to my knowledge, on medical treatment alone, 38 (34.2%) patients had become pregnant. Three of these patients miscarried, but all the others gave birth to live babies.

Since this line of treatment can obviously have no influence upon obstructed tubes, it is not worth trying for more than a few months. I maintain, however, that it can influence the marriage which is sterile on account of poor spermatogenesis, as I shall attempt to show, and it is particularly useful in those patients who suffer from repeated miscarriages. Table II shows the results of the analysis of 38 cases in which there had been no difficulty in conceiving but merely in retaining the foetus. Not one of the patients whose records are shown in the Table had suffered from less than two miscarriages and not one had carried a baby to term.

This method of treatment has thus a wider application, particularly in two types of case—namely, (1) cases of repeated miscarriages; (2) cases in which a fault in the husband's semen is responsible for the infertility.

Cases of Repeated Miscarriages

Many of such miscarriages appear to result from faulty nidation due either to a poorly prepared endometrium—that is, a fault in the environment—or to what can be described as poor germ-plasm—namely, a fault in the embryo. In fact, all causes of miscarriage must fall within these two categories, since Nature and Nurture, operating together, fashion the foetus—that is, embryonic development depends upon the interplay between genetic factors and factors imposed upon it by environment. A fault in either may result in impaired development or death of the embryo.

Many environmental causes of miscarriage are obvious and well known—for example, diseases of the maternal organism such as nephritis, hypertension, virus infections, etc. On the other hand, it is not so generally realized that inadequate endometrial preparation for nidation must be regarded as forming an adverse environment for the growth of the embryo, and thus it can be considered to be one of the environmental causes of miscarriage. This conclusion, however, is complicated by the fact that although the suitability or otherwise of the endometrium for nidation in the first instance is imposed upon the foetus—that is, it depends upon the activity of the corpus luteum—this is true only up to the moment of nidation, since from then onwards the continued activity of the corpus luteum and consequently the character of the endometrium depend upon a stimulus from the embryo itself. There is therefore a direct link between the genetical composition of the embryo and the continuation of the life of the corpus luteum.

Nature has in this way cunningly contrived that the intrauterine environment shall be genetically determined, and has imposed upon the embryo the necessity to plough its own furrow.

This linkage between genetics and environment brings into consideration the father's contribution, and apportions to him part of the responsibility of ensuring an adequacy of the pregnancy hormones. The evidence obtained from the assessment of pregnanediol excretion rates suggests that a weak embryo means a weak stimulus (chorionic prolan), and a weak stimulus a deficiency of the ovarian hormones, with a resulting poor environment and probable death and expulsion of the foetus.

Whether or not a fault in nidation is genetic (that is, a fault in the ovum) or environmental, a better environment —namely, a better-prepared endometrium—may make all the difference between success and failure. Just as in dealing with a delicate seed the husbandman prepares his soil carefully, so in order to facilitate the growth of the human ovum we should see that the endometrial soil is well

prepared before the seed is sown; and this can best be achieved by the administration of the pregnancy hormones (oestrin and progesterone) from the day of ovulation and consequently before it is known whether the patient is pregnant or not.

Below, Table II shows the results of treatment of 38 cases of repeated miscarriage, for none of which was any apparent cause found. In all these cases rhesus incompatibility was excluded. It is a point of interest that in 30 of these cases the seminologist reported that the semen was subfertile, but, since it appears to me that seminologists have no normal standard on which to base such decisions, I do not think that any accurate conclusion regarding the semen can be drawn from these reports.

TABLE II.—*Repeated Miscarriages*

Total number of cases analysed		38
Number pregnant in 6 months		28
Live births	20	
Miscarriages	6	
Stillbirths	1	
Spina bifida	1	
Number not pregnant in 6 months		10
Previous miscarriages (96) among the 38 patients:		
26 had had 2 miscarriages		52
8 „ „ 3 „		24
4 „ „ 5 „		20
Results According to Number of Miscarriages		
Two miscarriages:		
Cases		26
Pregnant in 6 months		20
Living children	15	
Miscarriages	5	
Three miscarriages:		
Cases		8
Pregnant in 6 months		6
Living children	4	
Miscarriages	1	
Spina bifida	1	
Five miscarriages:		
Cases		4
Pregnant in 6 months		2
Living child	1	
Stillbirth at 8 months	1	

Thus in six months 28 of these 38 patients were pregnant and 20 carried their babies through to term. Two were delivered by caesarean section.

Infertility due to Inadequate Semen

Where we are dealing with a case of infertility in which we know that the semen is inadequate the same argument of preparing the soil to compensate for genetic weakness of the seed holds good.

Finally, there are two points in this plan which I would like to emphasize:

1. It has been shown by Allen (1932) and Leonard, Hisaw, and Fevold (1932) that progestational proliferation of the endometrium will not take place unless it has been first sensitized by oestrin. It is for this reason that dienoestrol is administered in conjunction with ethisterone (progesterone). Also, it may be that the varying endometrial changes sometimes seen are due to an imbalance of these two hormones—that is, the endometrial response to progesterone is poor because there is not present at the same time an adequate oestrogenic secretion.

2. The hormonal treatment is continued until the 18th week and then withdrawn, since it has been shown by Browne, Henry, and Venning (1939) and others that there is a sharp rise in pregnanediol excretion about the 13th to the 16th week, and this increased excretion has been interpreted as signifying the commencement of elaboration of progesterone by the foetal chorion.

To continue to boost a pregnancy after this time, apart from being difficult and expensive, would appear to be eugenically unsound, since, if the foetus cannot elaborate enough hormones for the continuation of the mother's pregnancy, it might be a dysgenic act to allow it to live. Malpas (1942), Wenner (1941), and others have drawn attention to the fact that the incidence of foetal malformations is closely bound up with the problem of miscarriage, and Wenner states that if a threatened miscarriage continues to term there is a greater than average chance of a deformed baby resulting.

During the recent war I was tempted on three occasions to give larger quantities of the ovarian hormones than is my custom and to continue them throughout the whole of the pregnancy. These three patients had threatened to miscarry before I saw them, and were bleeding when I first examined them, although uterine contractions were absent and urine pregnancy tests were positive. All three continued to bleed from time to time throughout the pregnancy, uterine growth was poor, and the breasts lacked serum.

After treatment of such patients for a week or two I would normally have withdrawn the hormones and allowed the miscarriages to take place. These three patients, however, were elderly primigravidae, and their husbands were going on service abroad and were not likely to return in time to make further conception possible. I therefore continued to administer large quantities of hormones throughout the pregnancies in spite of repeated bleedings, slowly growing hard uteri, and poor breast changes. All three terminated their pregnancies by premature labour between the 30th and 35th weeks, and all three gave birth to abnormal babies, not one of whom survived. Two of the babies were cases of exomphalos and one was a case of microcephaly, and the labour was accompanied by bleeding from a placenta praevia.

I therefore now discontinue administering the hormones at the 18th week, at which time the function of the corpus luteum is over and the hormones should have been elaborated entirely by the embryo itself. The embryo should, as it were, stand on its own feet from then onwards.

To continue to treat a case of threatened miscarriage in spite of repeated bleedings can be likened to watering a garden when a plant is withering. The damage has already probably been done and we are unaware of the direction in which the embryo is developing. In most cases it would be advisable to allow the miscarriage to complete itself and start again with an endometrium adequately prepared—that is, to sow the seed in better soil by adopting the plan which I have outlined above—since a good start means good roots and good roots a good superstructure (the foetus). For this reason it does not appear to me to be unwise to aid the embedding and early growth of the embryo, but once the stage is reached at which large quantities of hormones are necessary and at which they are elaborated entirely by the foetal chorion I think that in the interest of eugenics the help should be withdrawn.

Embryos of all animals lower than the mammals have a very uncertain environment, for which they are compensated by multi-egg spawning. The environment of the mammalian embryo, however, is so potentially safe that were some check not placed upon it many abnormalities might survive. Nature, however, has determined that mammalian embryonic environment shall be genetically controlled, and thus those embryos which fail to elaborate enough hormones for their own survival are discarded. In the present state of our knowledge of embryonic growth it would seem to be unwise to run counter to this principle.

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RINGWORM OF THE SCALP IN THE EASTERN REGION OF SCOTLAND, 1946-7

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The main object of this paper is to present a picture of ringworm of the scalp in the Eastern Region of Scotland (counties of Angus and Perth) from July 1, 1946, to the end of 1947. During this period there were two epidemics of small-spore ringworm and 631 cases were seen. Owing mostly to lack of appreciation of the factors involved, misleading or doubtful statements are still being made about ringworm of the scalp, and the opportunity is here taken to make categorical statements when these appear justified. Some experiments with local treatment are described.

The great majority of cases of ringworm of the scalp in this country are due to microsporon infection, but as one travels south through Europe the proportion changes till in Italy nearly all cases are due to the trichophyton (Walker and Percival, 1939). Recent reports confirm this statement. Keddie (1947) found in an epidemic of scalp ringworm in Bathgate, Scotland, that all the 351 children were infected by microsporon. Chmel (1946), in analysing results of cultures from 156 cases of ringworm, not confined to scalp cases, in Czechoslovakia from 1942 to 1946, found that microsporon was responsible for 40% (he states that the number is still increasing), *Trichophyton endothrix* 22.4%, *T. ectothrix* 26.9%, achorion 2.56%, and epidermophyton 8.14%. Catanei (1947) states that out of 871 cases of ringworm in school-children in Algiers examined in 20 years 4.5% were due to microsporon (*M. canis* more often than *M. audouini*), 9.5% were favus, and the remaining 86% *T. endothrix* infections.

In the U.S.A., reports of several epidemics have recently been published showing an overwhelming preponderance of microsporon infection of the scalp. Schwartz *et al.* (1946) found *M. audouini* in all but 8 cases out of 565 in Haverstown, Maryland, during 1944–5. Lewis *et al.* (1946) saw in the New York Hospital 312 patients with tinea capitis from July 1, 1943, to June 30, 1945; 305 were microsporon infections (*M. audouini* 275, *M. lanosum* 30), 5 were due to *T. endothrix*, and 2 to achorion. Over 28 months to May, 1945, out of 928 cases in the Vanderbilt Clinic Miller *et al.* (1946) found 96.9% due to *M. audouini*, 2.6% due to *M. felineum* (*M. lanosum*), and only 0.5% due to other organisms.

With regard to the type of microsporon found in this country, Duncan (1945) states that *M. audouini* seems to be the predominant species causing tinea capitis in the Midlands and North, while the animal types were common in school-children in the southern counties and in the London area. In the latter area the two types of microsporon were found in approximately equal numbers.

Favus was formerly common in Scotland. McCall Anderson (1871) found it in 1.56% of 10,000 consecutive dispensary cases in Glasgow. Norman Walker (1899) stated that the opportunities of studying favus were numerous in Scotland. As will be seen, it is now rare in the part of Scotland under consideration, though cases continue to crop up occasionally.

Two Epidemics of Ringworm

Fig. 1 shows the occurrence of ringworm of the scalp as seen in the ringworm clinic of Dundee Education Authority from its inception in 1914 to the outbreak of the last war. It will be seen that the infection had almost disappeared from this area by September, 1939. Its recrudescence is simply explained by war conditions: mass movement of children in evacuation schemes and consequent relaxation of supervision by parents and school medical staffs allowed an endemic condition to become epidemic.

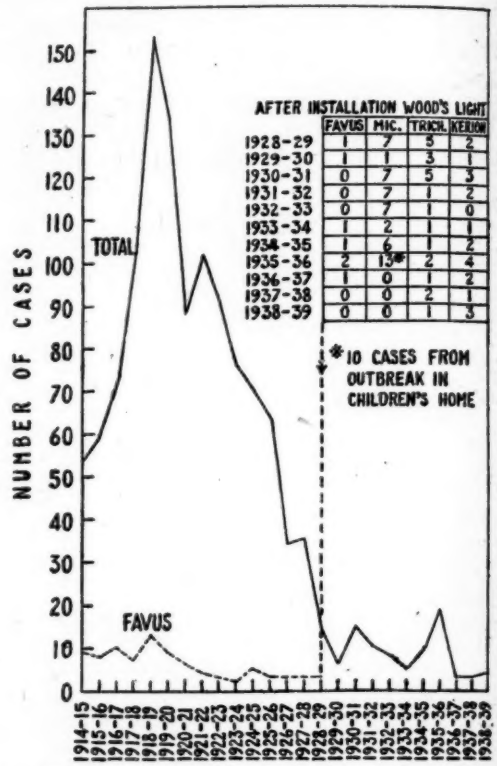

FIG. 1.—Incidence of scalp ringworm in Dundee from 1914 to 1939.

In this region there have been two recent major epidemics of ringworm of the scalp—one in Dundee (population 180,000), which first appeared in 1944, and one in Arbroath (population 18,000), some fifteen miles away, in which cases were first noted in the middle of 1946. Fig. 2 shows the progress of these epidemics.

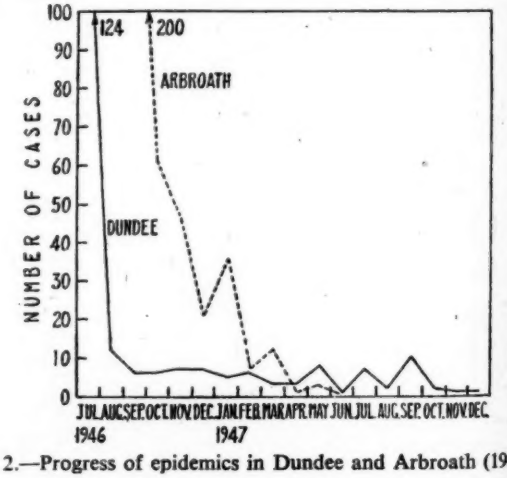

FIG. 2.—Progress of epidemics in Dundee and Arbroath (1946-7).

Before the return of one of us (J. K.) from war service considerable difficulty was experienced in dealing with the Dundee epidemic. Adequate facilities for *x*-ray epilation were not available and thallium had been procurable only in inadequate quantities when it had been available at all. From the middle of June, 1946, however, the epidemic could be tackled satisfactorily, and when asked to deal

with the subsequent epidemic in Arbroath we were able to arrange at once for the requisite organization and facilities.

From July 1, 1946, to the end of 1947 Dundee produced 217 cases, in Arbroath there were 381, while from other parts of the region we received 33—a grand total of 631 cases.

Mycology

Owing to scarcity of Sabouraud's original medium and the difficulty of classification with any modification, not all the cases were examined culturally. By random culture from cases considered typical of infection by *M. audouini* and routine investigation of all the rest we were able to satisfy ourselves that any error in clinical diagnosis put the more inflamed audouini infections among the animal ringworms, never the reverse.

TABLE I.—*Type of Infection*

	Microsporon		*T. endothrix*			*T. ectothrix* (Clinical)	*Ach. schön.*	Total
	Aud.	Lan.	Crater	Sulphur	(Clinical)			
Dundee ..	202	8	5	1	1	—	—	217
Arbroath ..	381	—	—	—	—	—	—	381
Rest of region	30	—	—	—	—	1	2	33
Total ..	613	8	5	1	1	1	2	631

Table I shows the types of infection found and the very great preponderance of *M. audouini* infections—97.1%. In all, 98.4% were microsporon infections.

In Dundee 183 cases were in boys and 34 in girls; in Arbroath the figures were 322 and 59 respectively; while from the rest of the region there were 26 boys and 7 girls. This gives a proportion of 84.15% boys and 15.85% girls affected. Keddie (1947) found 89% boys affected and 11% girls out of 381 cases; Schwartz *et al.* (1946) give 84.4% boys and 15.6% girls among their 565 cases, so that the figures from this country and from the U.S.A. for similar epidemics are almost exactly the same. Fig. 3 shows the age and sex incidence in the Dundee and Arbroath epidemics.

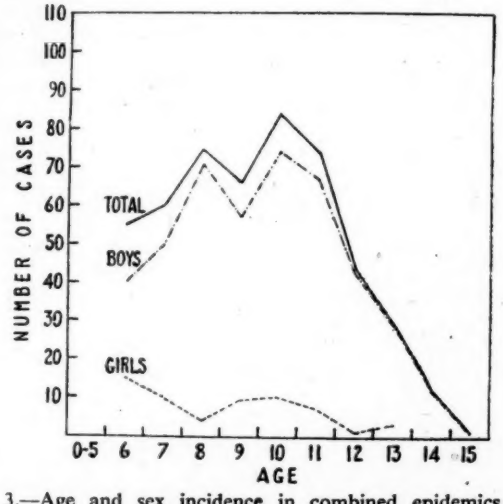

FIG. 3.—Age and sex incidence in combined epidemics. Not shown in the Graph are ages 0–5 years: boys 72, girls 33, total 105 cases.

The marked prevalence of the infection in boys in the "clipper area"—that is, the area so dealt with in barbers' shops—had been commented on by Schwartz *et al.* (1946). They found 65% of boys were affected in this area alone, 31% in the clipper area and elsewhere, and 4% on the crown. In girls the commonest site was the parting of the hair. Table II shows the site of the primary lesion in the Dundee and Arbroath epidemics. In the case of the disseminated infections it was impossible to ascertain accurately where the disease started, but the clipper area was always included. The cases affecting the eyebrows were interesting. Here typical lesions of *M. audouini* infection of the glabrous skin were seen, including in their orbit parts of the eyebrows. Examination under Wood's light showed the typical fluorescence of the eyebrow hairs within the infected areas. Lesions of the hair margin showed fluorescence of the lanugo hairs as well as of the scalp hairs within the lesion.

TABLE II.—*Site of Original Lesions, Dundee and Arbroath Epidemics*

	Boys	Girls
Occipital region ..	56% } 65% "clipper area" ..	32%
Parietal region ..	9% }	17%
Vertex	4%	16%
Frontal region ..	2%	6%
Hair margin ..	4%	6%
Disseminated ..	25%	21%
Eyebrow only ..	1 case	2 cases

In boys the most prominent part of the occiput was the one most frequently involved. This led one to incriminate as the source of spread something with which this part in particular came in contact, such as the back of cinema seats, but no definite proof could be obtained that they were at fault. Barbers' shops are a more likely source of spread. Few barbers sterilize the tools of their trade between customers, and scissors, clippers, combs, and brushes can easily pick up infected particles of hair and pass them on to other scalps. Girls are not so exposed to this risk, and their long hair affords a considerable degree of protection from infection. This is shown by the fact that the more easily accessible portions of the scalp about the parting of the hair are most often involved, as Schwartz remarks.

Organization

To control ringworm infection it is essential that efficient organization and liaison exist. Any case of ringworm of the scalp should be notified to the school medical officer concerned so that all possible contacts can be examined by Wood's light and missed cases discovered. By this means other epidemics have been nipped in the bud, and by the end of the period under review ringworm seems to be well under control throughout the whole of the region. For instance, in one small town a game of blind-man's-buff resulted in four girls developing ringworm in the area which had been in contact with the handkerchief. The source of infection was known and further spread was prevented. A pupil in a private girls' school was found to have ringworm. She had recently returned from India, where she had had ringworm but had been pronounced cured by her doctor. On being informed the school medical officer visited the school by arrangement and examined all the girls under Wood's light. Three other girls were found to be infected, but though this examination has been repeated there have been no further cases. A boy in hospital suffering from paralysis following anterior poliomyelitis was observed to be infected. He had passed the disease on to two other boys in the ward, but his history showed that he had had the infection before admission. The school medical authorities visited his home town and found among his class at school three other cases.

School medical authorities should have a portable source of Wood's light and a staff trained in its use. The immediate examination of all possible contacts, treatment of any case found, and repetition of the examination made till a period of at least three months has elapsed since the last case was discovered will ensure extermination of the outbreak.

For the investigation of children under school age one has to depend on the co-operation of the parents, but they

are as a rule very willing to have their children examined. The demonstration of a vividly fluorescing head creates a very strong impression on parents.

For treatment accommodation provided with Wood's light and a trained staff is essential. Cases were seen by us weekly, but manual epilation where required was done by the nursing staff. They soon grew very proficient in the detection of infected hairs and in their removal. Skilled fingers will remove many an infected hair which would break off under less adept hands.

Recording must be carefully done not only to provide a record of treatment but to keep a check on attendance so that absentees can be rounded up. Although attendance of patients was on the whole satisfactory, carelessness had to be checked and absentees induced to return by visits to their homes to explain the necessity for regular attendance not only for the child's sake but for that of others who might be infected by him.

The running of the clinics was under our supervision, for it is very necessary that a trained dermatologist should oversee the treatment. Ringworm of the scalp varies so much in its manifestations that the many problems that crop up can be solved only by one experienced in dealing with ringworm.

No child was allowed to return to school until given permission by the dermatologist. Without the use of Wood's light it is impossible to be certain that all infection by microsporon has gone. Many cases have been seen in which clinically no evidence of infection remained and yet under Wood's light the tell-tale fluorescence showed that the disease was still present. It should be stressed to all general practitioners that this is the only certain method of assessing cure and preventing children still infected being allowed back at school.

Clinical Varieties of Scalp Ringworm and Their Diagnosis

The various types of ringworm must be considered separately; they present different problems in diagnosis and require different forms of treatment.

Small-spore Ringworm.—All cases of this infection showed characteristic fluorescence under Wood's light. This appears to be common to hairs affected by different species of microsporon, but, in addition, by this means information can be obtained about the age and state of the infection.

M. audouini.—Recent infection showed well-defined circular areas within which the hairs fluoresced bright green. Sometimes the hairs at the margin were more evident than those at the centre; they had not been broken off so short. In such cases total epilation by *x* rays or by thallium is the most rapid and certain means of cure. The infection is virulent and likely to spread. In older infections the patches are not so well defined and the fluorescence may not be so vivid—whitish rather than green. There is often a more pronounced scaly reaction of the skin than in new infections and there is not the same tendency to spread; the fungus appears to have lost some of its virulence and is more amenable to treatment by local epilation by *x* rays or even to local application of a fungicide and manual epilation. The hairs are not so brittle as in a recent infection and can often be epilated whole.

Occasionally, especially after thallium epilation, a few hairs remained infected in an attenuated form. These hairs may be of normal length and show an interrupted fluorescence giving rise to a beaded appearance under Wood's light. It was usually possible to epilate such hairs completely. If a hair broke below the surface of the scalp a scale was apt to grow over the follicular orifice and hide the stump. Consequently there was no green fluorescence under Wood's light till the scale had been removed, when the vivid green of the growing stump became visible. Any scale must be removed and the underlying scalp inspected before one can be certain of cure.

Sometimes a case of *M. audouini* infection showed a kerion reaction. If one lesion became affected, all did. These cases were apt to be mistaken for animal microsporon infections, but culture showed the characteristics of *M. audouini*. The development of kerion in these cases is spontaneous and not affected by any form of treatment used. It may be active enough to cause spontaneous fall of the affected hairs and consequent cure, but is less likely to do so than in the case of infection by *M. lanosum*. Out of the 381 Arbroath cases 24 showed this kerion formation—15 were cured by local measures and 9 required *x*-ray epilation.

M. lanosum.—At first this infection is clinically indistinguishable from that due to *M. audouini*, but in all cases seen a follicular inflammatory reaction occurred, probably at least a fortnight after the first appearance of symptoms, leading to mild kerion formation, usually with defluvium of the patches and cure. This could be helped by manual epilation of the affected hairs under Wood's light. Sometimes these cases were given *x* rays before the onset of kerion; this seemed to have little influence on its progress. The kerion did not seem to be made worse by *x*-ray treatment.

The degree of kerion produced by microsporon infections is much less than by *T. ectothrix*, and no sequelae such as permanent loss of hair or scarring were noted. The appearance of this reaction is therefore beneficial, and it is regrettable that so far no satisfactory method of producing it artificially has been devised.

T. endothrix.—In view of the small number of cases seen there is little to say about this infection. Careful examination under Wood's light failed to show any fluorescence of the affected hairs. No case resembling a condition which could be called "black dot ringworm" was seen. The clinical appearance in all cases was an irregular area showing loss of hair with some scaliness and with broken hairs scattered between those of normal length. Scrapings from the affected area examined in liquor potassae under the microscope revealed among the scales fragments of hair containing the typical chains of squared spores. Local epilation of the affected areas by *x* rays was sufficient to cure the condition.

T. ectothrix.—Only one case is included in this series. Owing to the length of time the disease had existed no affected hairs remained and culture from pus and crusts was negative. The kerion was typical of this type of infection, a well-defined, swollen, inflamed area oozing pus from dilated follicular openings. The child came from a farm where cattle were infected with ringworm. During the period under review we have seen only one case of ectothrix kerion in which affected hairs remained, and on careful examination under Wood's light no fluorescence of the hairs was noted. In this case *T. gypseum asteroides* was the fungus responsible. Fortunately Wood's light is not essential for the management of such cases: the clinical picture is adequate guide for diagnosis and estimate of cure.

Favus.—The two cases in this series were in brother and sister who lived in the country. The disease had existed for over a year and had been diagnosed as seborrhoeic. The mother had been conscientious in her treatment, which consisted in regular washing and application of ointment; consequently no scutula were seen and there was little alopecia. The picture was of well-defined patches of inflammation of the scalp, especially round the follicles. The scalp in the affected areas was red and rather scaly; there was slight patchy cicatricial alopecia, but no broken hairs were seen. The margins of these areas were sharply defined. Favus was suspected on account of the above characteristics and the occurrence in two members of the same family. There was also a distinct mousy odour about the scalps. Under Wood's light the diagnosis was easily confirmed, and the extent of the infection was found to be much greater than had appeared at first sight. There were numerous unsuspected small areas of infection. Achorion infection can readily be distinguished from microsporon infection under this light. The fluorescence is a dusty green, quite different from the brilliant green fluorescence of microsporon-infected hairs. A still more distinctive characteristic is that the hairs are not broken off short but are more or less of normal length. The combination of long dusty-green fluorescing hairs on a scalp inflamed and red in colour, showing alopecia with

scarring occurring in well-defined patches, is pathognomonic of favus and enables a diagnosis to be made even in the absence of scutula. "Chronic impetigo" of the scalp, the lesions remaining in the same situation for more than a few weeks, should always lead to a suspicion of favus.

It may be mentioned that during the period under review two cases of favus of the glabrous skin were seen; both showed typical scutula. One of these patients, a boy, had lesions on his abdomen; the other, an adult female, was affected on the left upper arm. In the latter case *A. quinckeanum* was the responsible fungus.

Treatment

Epilation by *x* rays or thallium was employed in all cases of microsporon infection except (*a*) cases showing kerion formation, in which local treatment was given a chance first—and only if there was likelihood of insufficient spontaneous epilation were other means used; (*b*) those with attenuated old infection—in these cases also local applications and manual epilation were used; and (*c*) children under 2 years old, because it was not thought desirable to use thallium at such an early age, and because, the hair follicles being relatively shallow in young children, the disease is more amenable to local treatment. It was found, however, that at best these cases took longer to cure than those which were epilated by thallium or by *x* rays.

In all, 93 cases were cured without *x*-ray or thallium epilation—a percentage of 14.74. Lewis *et al.* (1946) state that there is a tendency to spontaneous recovery in approximately 10% of patients. The remainder underwent *x*-ray or thallium epilation. All children under 7 years of age who were unlikely to remain still enough for satisfactory *x*-ray treatment received thallium. Beyond transient and mild symptoms there were no bad effects from this drug. Strict precautions were taken for its administration; weighing was done by a nurse and checked independently by a doctor, who wrote out the prescription for the dose, using Ingram's method to calculate the amount required—i.e., multiplying the weight in pounds by four to get the dose in milligrams. The dose was made up in orange squash and given to the child and drunk in the nurse's presence. No difficulty was experienced in inducing the child to take the dose in this way. It was not regarded as "medicine."

In view of the large numbers to be dealt with, *x*-ray epilation of local patches was used in selected cases to save time. At first all the cases so chosen were probably not suitable, and the treatment had to be extended in some cases as the disease had spread. Later more careful selection made this method more successful.

Thallium epilation is not so complete as that following *x* rays, and considerable trouble was experienced when all the affected hairs did not fall out. Treatment had then to be continued by manual epilation, and in some cases thallium had to be repeated or *x* rays used to obtain a cure. Six months were allowed to elapse before thallium was repeated, and no bad effects were encountered; in fact, some children showed more reaction after the first dose of thallium than after the second. Details of treatment are given in Table III.

TABLE III.—*Treatment (in Addition to Manual Epilation)*

Ointments only	93	Total *x* rays repeated	2
Local *x* rays	197	Thallium	77
Local *x* rays repeated	10	Thallium repeated	6
Local then total *x* rays	25	Thallium, then *x* rays	16
Total *x* rays	203	Refused all treatment	2

Ointments were used in preference to liquid applications. Their greasy nature makes infected particles less likely to fly about and infect others. Iodine was not used; it coats the hairs so that they appear jet-black under Wood's light and all fluorescence is obscured. Whitfield's ointment was employed as a routine, but if kerion was present it was replaced by 1% ammoniated mercury in petroleum jelly. Through the kindness of I.C.I. (Pharmaceuticals), Ltd., a supply of salicylanilide ointment as recommended by Schwartz (1946) was obtained. The formula used was:

Salicylanilide	4·5
"Cetavlon"	1
Carbo-wax 1500	to 100

In addition salicylanilide in "eucerin" base and in alcohol were used, and latterly sodium salicylanilide.

Parents were instructed to apply the ointment to the whole scalp daily, to wash it twice weekly, and to keep it covered with a cotton cap. When the hair began to fall it was to be assisted by daily pulling out the loose hair with the object of completing the epilation as rapidly as possible. Patients attended the clinic weekly during this period so that the epilation could be supervised. This is extremely important, as parents varied in their efforts to extract the loose hairs.

Schwartz (1946) found it difficult to show statistically the advantage of salicylanilide in carbo-wax over other applications, but it was undoubtedly present, though we find ourselves in the same position. Those who had to deal with the epilation of the hair in the various clinics were unanimous in their opinion that it was the only application which seemed definitely to assist in cure. Under its influence hairs were more easily epilated and more likely to come out whole than with other ointments. The greater penetrative power of the carbo-wax was apparently the important factor, as salicylanilide in eucerin base was no more effective than other ointments, and salicylanilide in alcohol was found to give a similar result. Sodium salicylanilide was disappointing and less effective than salicylanilide.

It is important to remove any ointment before examination under Wood's light, as vaseline fluorescence obscures that of ringworm. Carbo-wax is non-fluorescent, but sodium salicylanilide, unlike salicylanilide, fluoresces blue, not unlike vaseline. It was found that by passing the light through a lens not only was its intensity increased but much of the vaseline fluorescence was removed without altering the fluorescence of the affected hairs. Lenses were used both in this way and to examine the scalp to facilitate the identification and removal of faintly fluorescing hairs and short stumps.

Four weeks after *x*-ray or thallium administration the scalp was normally clear of infected hairs and the child was allowed to return to school. Supervision was continued for a further six weeks, and the child was re-examined in a fortnight and again in four weeks. Occasionally an odd fluorescent hair was detected at these examinations; this was usually easy to remove completely. In this case the child reported again in four weeks. By the end of that period the hair had started to grow again and its progress could be noted. A satisfactory regrowth was obtained in every case except those of favus and ectothrix infection which showed some trace of permanent baldness.

Regrowth of the hair after *x*-ray epilation often shows an increase in curliness over its previous condition. The number of curly-headed boys in Arbroath was at one time noteworthy, but to the relief of most of them this state is only temporary, and the hair gradually resumed its former condition and the curls disappeared in the hairdressers' shops.

Summary and Conclusions

After a review of the occurrence of ringworm of the scalp in Europe and the United States of America a summary of the incidence of this disease as seen in Dundee from 1914 to 1939 is given. Cases seen in the Eastern Region of Scotland from

July 1, 1946, to Dec. 31, 1947, are analysed, and show that, including two major epidemics during this period, out of 631 cases 98.4% were microsporon infections (97.1% *M. audouini*) and 84.15% were in boys. These figures correspond closely to recent figures from other parts of Scotland and from the U.S.A. Infection most commonly appeared to occur in barbers' shops.

Wood's light was found essential in the diagnosis and management of microsporon and favus infections but of no use in trichophyton cases.

Epilation by *x* rays or thallium is still the most rapid and successful means of cure, but fungicides assisted by a wetting agent in carbo-wax 1500 offer a chance of cure in at least a fair proportion of cases after a considerably longer period of treatment. It must be realized that, especially with the animal microspora, a modified kerion reaction may occur leading to spontaneous cure, so that in assessing the value of any "cure" for ringworm the actual fungus causing the condition and the criteria of cure must be known.

A brief note is made of the organization required for a centre to deal with cases of ringworm and the standards necessary for ensuring that patients are non-infectious before their return to school.

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CIRRHOSIS OF LIVER PRESENTING AS SEVERE ANAEMIA

REPORT OF TWO CASES

BY

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This paper concerns two cases of cirrhosis of the liver in which a severe anaemia, thought to be haemolytic, was the predominant feature. Both cases were sent to hospital because of anaemia, and cirrhosis of the liver was not diagnosed until after further investigation, in the second case not until necropsy. They are reported because haemolytic anaemia is said to be an uncommon complication of cirrhosis.

The anaemia accompanying cirrhosis of the liver is described as normocytic or macrocytic, and haemolysis is not a feature. The anaemia is seldom severe. Macrocytic cases resemble pernicious anaemia in some features (Whitby and Britton, 1946; Wintrobe, 1936; Wintrobe and Shumacker, 1933; Singer and Dameshek, 1941).

Davidson and Fullerton (1938) report a case of a macrocytic haemolytic anaemia in cirrhosis in which red-cell fragility was increased. Watson (1939), from studies of urobilinogen excretion, emphasizes that in some cases of cirrhosis a haemolytic element is present. He describes seven out of 38 cases of cirrhosis studied in which there was evidence of haemolysis. One of these had two severe haemolytic crises, during the second of which the patient died. Haemoglobin fell to the low level of 25%. Necropsy revealed a diffusely cirrhotic liver, which on section showed portal cirrhosis. The liver was described as quite fatty. Femoral marrow was red.

Singer and Dameshek (1941) include disease of the liver among the relatively few conditions that can give rise to symptomatic haemolytic anaemia. They describe a case of subacute hepatitis in which a severe haemolytic anaemia was an important symptom: the haemoglobin fell to 27%, there was marked reticulocytosis, sternal puncture revealed a normoblastic hyperplasia, the anaemia was macrocytic, and fragility was normal.

Case 1

The patient, a man aged 66, was admitted to Townleys Hospital on Oct. 2, 1947, because of extreme pallor and shortness of breath. He had been working as a lorry driver up to three weeks before admission. He gave a history of vague abdominal pain and lack of appetite for several months. He had been a heavy beer-drinker for 30 years. He was extremely pale with an icteric tinge. Liver was enlarged to the umbilicus and the spleen was palpable two fingerbreadths below the costal margin. A blood count showed: Hb, 18%; red cells, 890,000; C.I., 1. The red cells appeared normal in size and shape. Biochemical findings supported a diagnosis of cirrhosis of the liver. The van den Bergh test gave a positive direct reaction; total serum bilirubin was 2.6 mg. per 100 ml. Thymol turbidity was 12 units. Serum globulin was raised to 4.1 g. per 100 ml., serum albumin was 3.3 g. per 100 ml., and the albumin–globulin ratio was reversed. Urine gave a strong reaction for urobilinogen and contained a trace of bilirubin. Tests for occult blood in the faeces were negative on three occasions.

The patient received a series of blood transfusions until he died 21 days after he was admitted to hospital. Although he showed no obvious reaction to these transfusions it soon became evident that the transfused cells were rapidly destroyed, because the rise in haemoglobin obtained was very small. Twelve days after admission to hospital he had received 11 pints (6.25 litres) of blood and his haemoglobin had varied between 28 and 35%. Shortly before he died he received the packed cells from 3 pints (1.7 litres) of blood and the haemoglobin was raised to 45%.

At necropsy the liver was of normal size and showed a diffuse cirrhosis; the spleen was enlarged to twice normal size. Section showed a portal cirrhosis with the architecture of the lobules destroyed by numerous bands of young fibrous tissue insinuated between the liver cells. There were considerable deposits of iron pigment in the liver and spleen.

Case 2

A woman aged 58 was admitted to Townleys Hospital on April 1, 1948, because of pallor and dyspnoea. She gave a history of vague ill-health for over a year and had recently had a small vaginal haemorrhage. She had been living on a very poor diet for a long time and said the only thing she really cared for was a glass of beer.

On examination the patient was pale, slightly icteric, and looked very ill. There were purpuric spots on forearm, thighs and buttocks. She was obese, but it was thought that a tumour (? liver) could be felt in the right hypochondrium. Pelvic examination revealed nothing abnormal. The blood count on admission was as follows: Hb, 29%; red cells, 1,410,000; C.I., 1.03; reticulocytes, 22.5%; white cells, 4,600; normal differential; platelets, 160,000; bleeding and clotting time normal. There was a little anisocytosis, but the majority of red cells appeared normal in size. Five orthochromatic normoblasts were seen while counting 100 white cells. Biochemical findings were as follows: van den Bergh test gave a positive direct reaction, serum bilirubin 3 mg. per 100 ml.; direct/indirect quotient (Gray, 1947) 68. Thymol turbidity was normal (4 units), alkaline phosphatase normal (10 units), and urine gave a very strong reaction for urobilinogen and contained a trace of bilirubin. No occult blood was found in the stools. The patient was given 3 pints of blood, which raised her haemoglobin to 55%, but her clinical condition showed

very little improvement. A week after the transfusion a fragility curve (Creed's method) showed a definite increase in fragility, the haemolysis in 0.5% saline being still 8%. Patient died 11 days after admission to hospital.

Post-mortem findings were as follows: the liver was slightly larger than normal and showed cirrhosis. The colour was a green-brown and the surface was covered with small nodules. The spleen was congested and enlarged to twice the normal size. Section showed a portal cirrhosis with young fibrous tissue breaking up the lobules. There was infiltration of the fibrous tissue with lymphocytes. Quite a large proportion of the liver cells were distended by globules of fat. There were deposits of iron in the liver and spleen. The femoral marrow was red throughout its length and showed a normoblastic hyperplasia.

Discussion

In both cases a severe anaemia has to be explained. Haemorrhage can be discounted. Tests for occult blood in the stools were negative. In the first case there was no history of bleeding; in the second there had been a small vaginal haemorrhage and purpuric spots, but nothing which could account for a haemoglobin of 29%. The appearance of the blood films was quite unlike that of pernicious anaemia. Case 1 received an urgent blood transfusion on admission and a reticulocyte count was not done, but there is evidence of a haemolytic process in the remarkable behaviour of this case on transfusion. A total of 14 pints (8 litres) of blood was given to this patient over a period of 14 days and relatively little increase was obtained in the haemoglobin. This can be explained only by a rapid destruction of transfused cells, which is one of the features of haemolytic anaemia (Sharpe and Davis, 1938). In the second case there is clear evidence of a haemolytic anaemia: a high reticulocyte count, numerous nucleated red cells, increased fragility, and red marrow in the shaft of the femur.

The biochemical findings do not assist in the diagnosis of the anaemia. The positive direct van den Bergh reaction and the presence of bilirubin in the urine are not, of course, the findings of haemolytic jaundice, but can readily be explained on the basis of the coexistent liver damage. The large amounts of urobilinogen in the urine are more likely to be due to the cirrhosis than to the haemolysis.

My thanks are due to Dr. E. S. Gawne, medical superintendent, Townleys Hospital, for permission to publish these case reports, and to Drs. D. Mooney and R. Kearney for the opportunity to co-operate in the diagnosis and treatment.

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The village of Syrianokhorio in Cyprus has recently celebrated the eradication of malarial-carrying mosquitoes with religious services and a meeting at which the authorities were thanked, reports the Colonial Office. The offensive against mosquitoes was started by the Cyprus Government Medical Department in 1946, and is aimed at complete elimination of malaria from the island by 1952. The estimated cost is £300,000. The terrain is a difficult one to work in and covers about 3,500 square miles; the western half is mountainous, with steep precipices and rushing streams. *Anopheles superpictus* breeds in the streams and rock pools in almost inaccessible places. The country is divided into zones which are systematically sprayed with a solution of D.D.T. in oil.

TREATMENT OF ABORTUS FEVER WITH SULPHONAMIDES AND BLOOD TRANSFUSIONS

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The treatment of undulant fever has remained unsatisfactory in spite of recent advances in chemotherapy, although occasional successes have been reported from the use of sulphonamides, suramin, vaccines, and injections of brucellin. Recent reports of treatment with penicillin and streptomycin are also very disappointing. In an annotation in the *British Medical Journal* (1947, 2, 700) attention was called to a report by Huddleson, made to the Fourth International Congress for Microbiology at Copenhagen in July, 1947, of four cases of undulant fever which responded quickly to the administration of small doses of sulphonamides together with blood transfusions. No special care was given to the selection of donors; it was assumed that all human serum contains bactericidal brucella antibody, but it is difficult to understand why a weak antiserum in conjunction with a sulphonamide should have a bactericidal effect. Huddleson explains this on the basis of the Neisser-Wechsberg phenomenon—a serum may be bactericidal in high dilution yet not in low dilution.

This method of treatment was tried in two cases of undulant fever with the encouraging results indicated in the following reports.

Case 1

The patient, a woman aged 32, first complained of feeling ill about Dec. 16, 1947. A week later she was found to have an evening temperature rising to 102° F. (38.9° C.). She was seen by her doctor on Jan. 17, 1948, when she complained of tiredness, headaches, and pain in the back. On examination at this time her temperature was 100° F. (37.8° C.) and her pulse rate 86 per minute; she had lost a little weight and her spleen was much enlarged.

On Jan. 8 she was admitted to Clatterbridge (County) General Hospital, where re-examination confirmed the above findings. Her evening temperature ranged from 100.4° to 102.6° F. (38°–39.2° C.), but apart from the fever and the splenic enlargement no abnormality was found. On Jan. 19 the blood urea was 26 mg. per 100 ml. A blood count showed red cells, 5,000,000 per c.mm.; haemoglobin, 92%; white cells, 3,600 per c.mm. (polymorphs 52.5%, lymphocytes 45%, monocytes 2.5%). Agglutinations: positive in all dilutions up to 1:1,400 against *Br. abortus*; negative against *Salm. typhosus* and *paratyphosus*. The urine was free from sugar and albumin. Blood culture: contaminated by *Staph. albus* (coagulase-negative), no other organisms found. *X*-ray film of the chest was normal. Blood Wassermann reaction was negative.

The following treatment was given: penicillin, 9 mega units (Jan. 25 to Feb. 3), sulphadiazine, 75 g. (Feb. 7 to 19), and blood transfusions of 10 oz. (280 ml.) on Feb. 11, 13, 15, and 17. There was no clinical improvement with penicillin, but once the sulphadiazine and transfusions were begun the temperature rapidly subsided and the patient's condition improved. She was discharged from hospital on Feb. 26 and reported to the outpatient department on April 14. She had been afebrile since discharge, felt well in every way, and there was no splenic enlargement.

The following are the results of further investigations. Feb. 19:—Blood count: red cells, 4,380,000 per c.mm.; haemoglobin, 87%; white cells 5,200 per c.mm. Agglutinations: negative in dilutions of 1:25 and 1:50 against *Br. abortus*; positive in dilutions of 1:125, 1:250, and 1:1,250. April 16:—Blood count: haemoglobin, 95%; red cells, 4,680,000 per c.mm.; white cells, 6,600 per c.mm. (polymorphs 68%, lymphocytes 30%, monocytes 1%, basophils 1%). Agglutinations: negative in dilutions of 1:25, 1:50, 1:250, and 1:1,250 against *Br. abortus*; positive in dilution of 1:125.

Case 2

This patient, a woman aged 38, first complained of feeling ill on Jan. 24, 1948. She had shivering, sweating, headache, and pain in the right ear. On examination she was found to have an evening temperature swinging to 102° F. (38.9° C.), but no other abnormality was found. On Feb. 8 a blood count showed: haemoglobin, 84%; red cells, 4,690,000 per c.mm.; white cells, 4,000 per c.mm. (polymorphs 46%, lymphocytes 49%, monocytes 4%, basophils 1%). Agglutinations: positive in all dilutions up to 1:500 against *Br. abortus*.

The following chemotherapy was given: sulphamezathine, 48 g. (Feb. 2 to 5 and 9 to 11), penicillin, 1,200,000 units (Feb. 9 to 11), and sulphadiazine, 51 g. (Feb. 27 to March 3). Despite this treatment the patient's condition deteriorated; she had distressing rigors with profuse sweating and pyrexia rising to 105° F. (40.6° C.).

On March 4 she was admitted to the Staffordshire General Infirmary. She was still seriously ill, the temperature rising to 104° F. (40° C.), and the spleen was slightly enlarged. Treatment with sulphadiazine and blood transfusions was begun on March 5, as follows: sulphadiazine, 30 g. (March 5 to 9) and 6 g. (March 13); blood transfusions, 10 oz. (280 ml.) (March 5), 15 oz. (425 ml.) (March 8), and 4 oz. (110 ml.) (March 13). The patient felt much better after the first transfusion and there was an immediate lessening of the severe rigors and sweating. She was discharged from hospital afebrile on March 18.

She felt well and remained apyrexial until April 6, when she developed pain under the right costal margin and a temperature of 102° F. (38.9° C.): a diagnosis of acute cholecystitis was made and she was readmitted to hospital on the following day. The condition showed no signs of settling despite 25 g. of sulphadiazine over a period of four days, and finally a cholecystectomy was performed by Mr. B. R. Sworn on April 19. The gall-bladder was acutely inflamed, and a pure culture of *Br. abortus* was obtained from the contents.

There was some increase in the pyrexia and malaise after the operation, so it was decided to try further treatment with sulphonamides and blood transfusions. Sulphadiazine, 12 g. (April 22 and 23) and 6 g. (April 27), and blood transfusions, 8 oz. (225 ml.) (April 23) and 6 oz. (170 ml.) (April 27), were given. There was a mild reaction to the second transfusion, a rigor, and transient rise of temperature, but immediately afterwards the pyrexia subsided completely and the patient said that she felt better than she had been throughout the whole illness. She was discharged from hospital on May 5 and has since remained well.

Comment

Both these cases of abortus fever had failed to respond to ordinary chemotherapy: Case 1 did not improve with penicillin and Case 2 was not affected by penicillin, sulphamezathine, or sulphadiazine. In each case there was rapid response to sulphadiazine and small blood transfusions. Case 2 returned three weeks later with acute cholecystitis due to *Br. abortus*; the temperature did not subside following cholecystectomy but responded to further sulphadiazine and blood transfusions.

While it is impossible to draw conclusions from only two cases, we feel that these results are encouraging and that this method of treatment should be given a more extended trial.

Our thanks are due to Dr. D. B. W. McKendrick, who called our attention to this method of treatment of abortus fever.

Medical Memoranda

Pneumococcal Meningitis in an Infant of 8 days: Recovery

The value of intrathecal penicillin in pneumococcal meningitis is now established, but the optimum dosage still seems to be a matter for controversy. Shalom (1945) reported eight cases of pneumococcal meningitis with three deaths, the patients having been given intrathecally 4,000 units of penicillin daily, together with penicillin intramuscularly and full doses of sulphadiazine orally. As purer preparations of penicillin have become available larger doses have been used. Smith, Duthie, and Cairns (1946) reported 18 cases (with only one death, due to fat embolism) treated with varying amounts of intrathecal penicillin, but they never gave more than 20,000 units in one injection, though 16,000 units 12-hourly were given in a few cases. They state that injections of 40,000 units or over may cause fits or gumming of the subarachnoid space. At that time they were using a preparation of penicillin containing 500 to 700 units per mg.

The following case is reported because of the extreme youth of the patient and because of the very large doses of penicillin which were given intrathecally without any ill effect.

Case History

A male child aged 5 days was admitted on Jan. 16, 1947, with his mother, who had lobar pneumonia, for breast-feeding. He was fully examined on admission. The cord had separated and the stump was dry and clean. He was slightly jaundiced and apparently had been so since he was 2 days old. His heart and chest were normal and his spleen was not palpable. There was no neck rigidity and his mouth and throat were healthy. He weighed 6 lb. (2.7 kg.). According to the mother his weight at birth was 7 lb. 4 oz. (3.3 kg.).

In spite of adequate amounts of milk for a child of his size and age he had lost weight. On Jan. 19 he passed one green relaxed stool and his temperature was 100° F. (37.8° C.). No physical signs were found, and his jaundice had faded. On Jan. 20 the temperature was 102° F. (38.9° C.). He was not taking his feeds well, and there was slight neck rigidity, but no other signs. A lumbar puncture was performed, and a turbid yellowish cerebrospinal fluid was obtained. Penicillin, 30,000 units, was injected intrathecally. The report on the cerebrospinal fluid was as follows: Opalescent fluid; lymphocytes, 6 per c.mm.; polymorphs, 82 per c.mm.; total protein, insufficient fluid; globulin, ++; chlorides, 700 mg. per 100 ml.; film, Gram-positive diplococci ++++; culture, profuse growth of pneumococci, penicillin-sensitive.

He was also given 0.5 g. of sulphadiazine, followed by 0.25 g. four-hourly for seven days, then 0.125 g. six-hourly for seven days (total 14.6 g.); 30,000 units of penicillin daily intrathecally for eight days (total 240,000 units); 30,000 units of penicillin intramuscularly three-hourly for 16 days (total 2,880,000 units); and subcutaneous salines to combat dehydration when he was not taking feeds well.

After three days there was some clinical improvement—less neck rigidity—and he took his feeds better. At the end of eight days the pyrexia had almost settled and the cerebrospinal fluid was nearly normal. Intrathecal penicillin was discontinued. Further recovery was uneventful. Owing partly to the fact that she was ill herself, the mother's milk dwindled in amount, and the baby was gradually weaned on to a proprietary milk preparation. He was discharged on Feb. 7 when fit and gaining well, his weight being 7 lb. 2½ oz. (3.25 kg.).

Discussion

It must be unusual for so young an infant to recover from pneumococcal meningitis. As the child was already in hospital early diagnosis and treatment were possible.

A preparation of pure white crystalline penicillin, containing 1,650 units per mg., which is much less irritating than the older impure preparations is now available. Certain points are thought to be of importance in the avoidance of reactions to the injections and of the introduction of secondary invading organisms. The penicillin used was prepared in separate doses of 30,000 units in 3 ml., each in a sealed ampoule; this prevents contamination of the penicillin solution. The small volume of the dose is, I feel, important, as large quantities of fluid may raise the tension of the cerebrospinal fluid considerably, particularly in small infants. I always aim, however,

at removing an equivalent volume of cerebrospinal fluid, plus 1 ml., before the injection. This should, of course, obviate that danger.

I wish to thank Dr. B. A. Young, medical superintendent, St. Alfege's Hospital, and Dr. B. Gottlieb, senior resident physician, for permission to publish this case, and the latter also for his help in preparing the paper.

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Smith, Honor V., Duthie, E. S., and Cairns, H. (1946). Ibid., **1**, 185.

Therapeutic Scurvy

The following case is of interest in that it shows the importance of viewing the body requirements as a whole when placing any patient on a dietetic regime.

CASE REPORT

The patient, a married woman aged 42, with one son aged 16 alive and well, was admitted to hospital complaining of swelling of the left leg for four weeks, with bruising of two weeks' duration. Five weeks before admission she noticed that her teeth were tender and that her gums were swollen and bled easily. Several teeth were extracted without undue haemorrhage. A few days before admission she got a severe pain in the left thigh, with a "cramping" sensation in the calf and the foot. She was sent into hospital as a case of thrombophlebitis.

Vision was blurred, but there was no definite night blindness. On admission she noticed dryness of the skin. There were no pins-and-needles or paraesthesia, no soreness of tongue, and no haematuria. She had had no serious illnesses, but since the age of 8 had been subject to attacks of migraine, which had become more frequent two years ago. She consulted her doctor, who diagnosed nervous dyspepsia and put her on a diet. This consisted of 2 pints (1.14 litres) of milk a day, which was simmered for some while before being consumed. She also had three eggs a week, steamed fish, bread-and-butter, and milk puddings; but she had no vegetables or fruit of any kind. No drugs were taken except stomach powders.

On examination she was seen to be thin and pale, and her lower gums showed purple-red proliferations between the teeth. In the upper jaw, where the teeth had been extracted, there was no abnormality. Examination of the chest and abdomen revealed nothing abnormal. Blood pressure was 120/60. The left leg was markedly swollen, with discoloration of the whole thigh, the appearance being like an extensive bruise. Both legs showed many small petechiae. A blood count showed: haemoglobin, 58%; red cells, 2,800,000; white cells, 6,000; normal differential count. Blood ascorbic acid was 0.1 mg. per 100 ml. Urinary excretion of ascorbic acid was 2.15 mg. in 24 hours.

It was considered that minimal doses of vitamin C would be of value. She was put on an ascorbic-acid-free diet and given 15 mg. of ascorbic acid daily. After three days she noticed improvement in her teeth and the left leg rapidly became more comfortable. Nine days later objective improvement in the leg and gums could be seen. In four weeks there had been no further bleeding, the bruising had gone, and there were only traces of the petechial haemorrhages, but no fresh ones. After approximately three weeks the urinary ascorbic acid excretion was 7.1 mg. in 24 hours and the plasma ascorbic acid was 0.25 mg. per 100 ml. She was given 150 mg. of ascorbic acid daily and discharged from hospital, but it was noticed that large doses of vitamin C did not produce any particular beneficial effect.

The patient has been followed up since discharge. She still complains of being tired, but the haemorrhages have disappeared and apart from flatulent dyspepsia she has no symptoms.

COMMENT

This was a case of scurvy due to grossly deficient diet, and it serves to emphasize the importance of giving adequate vitamin C with many of the diets used for treating dyspepsias, especially if the milk is boiled. The very small amount of ascorbic acid which was required to cure the condition is also noteworthy. The minimum daily requirement of ascorbic acid for an adult is generally accepted as being in the region of 25 mg., but this patient was cured by a dose as low as 15 mg. daily. The impossibility of diagnosing scurvy from the gums of edentulous people is once again remarked.

I should like to acknowledge the help given me by Dr. J. R. P. O'Brien, of the Biochemical Laboratory, Radcliffe Infirmary, Oxford.

PATRICK MALLAM, M.D., M.R.C.P.

Facial Seborrhoea in Arteriosclerotic Pseudobulbar Palsy

Profuse seborrhoea of the face associated with Parkinsonism is so characteristic of encephalitis lethargica that an exception to the rule is not without interest. In the following case the condition was due to arteriosclerotic degeneration of the brain.

CASE REPORT

The patient, a man aged 46, had never had seborrhoea until his present illness. Six months before admission his wife noticed that he seemed dull and sleepy, that he dribbled saliva, and that both hands were "shaky." He became slow in movement, irascible, and difficult to handle. His speech was slurred and his expression fixed.

On examination he looked older than his years, and his typically Parkinsonian face was thickly covered with a glistening film of sebum. The rest of the body was not so affected. He was given to fits of causeless weeping, but pathological laughter was not observed. He was disorientated for time and place, and showed defective memory for recent events. Insight and judgment were faulty, and he displayed a consistent disregard for cleanliness and the conventions. Speech was slow and slurred; it was embarrassed by Cheyne–Stokes respiration. There was no gross defect of sight. The fundi showed marked arteriosclerosis. There was a supranuclear paralysis of conjugate upward movement of the eyes, lateral and downward movements being intact. The tongue was spastic and could barely be protruded. Marked spastic rigidity of both arms and both legs was present. The left arm and leg were weaker than the right, and there was a left extensor plantar response; the right plantar was flexor. There was a coarse tremor of the fingers of both hands, but it was not typically Parkinsonian. Voluntary effort of one limb increased the rigidity of the opposite side of the body; consequently his incapacity was more pronounced when standing or attempting to walk than it was when lying down. He walked with a spastic shuffle and festination. There was no gross sensory loss, but his mental state precluded tests of the finer modalities. Sphincter control was intact.

The left ventricle was much enlarged. Blood pressure was 280/140. The urine contained a trace of albumin and a few hyaline casts. Blood urea was 60 mg. per 100 ml. The spinal fluid was normal in all respects, and the Wassermann reaction was negative in both fluid and blood.

Eight months after the first appearance of symptoms he had a series of epileptiform convulsions, between which he remained in an attitude of decerebrate rigidity. Twenty-four hours later he died.

The post-mortem report (Dr. J. G. Cummings) on the findings in the brain was as follows: "A recent haemorrhage filled the left hemisphere. Colloidin sections were cut from various parts of the brain and stained with haematoxylin, van Gieson, P.A.H., da Fano, and by the Gross method. Weigert–Pal preparations were also made. There is a widespread vascular abnormality, with marked proliferation of the intima and endarteritis. Atheromatous patches are present. The most marked damage is in the midbrain and pons, where in addition to vascular changes there are small zones of demyelinization in relation to the vessels. The cerebellum shows slight changes of a similar type and also some loss of Purkinje cells. Very few zones of cellular infiltration are to be seen, but in a few cases in the midbrain and pons there is some perivascular lymphocytic infiltration in relation to damaged capillaries. The appearances are those of arteriosclerosis; there is no evidence of encephalitis."

COMMENT

This case is of interest in two respects. First, it illustrates the sound rule that encephalitis lethargica should not be diagnosed except during an epidemic of that disease: sporadic cases resembling it almost invariably turn out to be some other condition. Secondly, facial seborrhoea has not hitherto been described in pseudobulbar palsy. Its occurrence in this case is perhaps explained by the unusually rapid onset of facial rigidity, which, as in encephalitis lethargica, came on within a few weeks, in contrast to the usual ingravescent onset in arteriopathic Parkinsonism. The seborrhoea is limited to the face, and it is only in the face that rigid muscles, by their insertion into the skin, can impose immobility on the integument in which the sebaceous glands lie. It is suggested that the seborrhoea which occurs as a temporary phenomenon with rapidly developing Parkinsonian rigidity of the face has a mechanical explanation and is not due to a central autonomic disturbance. This view is in harmony with the current belief that the sebaceous glands are not under nervous control.

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Reviews

MARXIST GENETICS

Soviet Biology: The Situation in the Science of Biology. Address delivered by Academician T. D. Lysenko at a session of the All-Union Lenin Academy of Agricultural Science, July 31 to Aug. 7, 1948. Translated for Science Section of the Society for Cultural Relations with the U.S.S.R. (Pp. 51. 2s. 6d.) London: Birch Books.

This address to the Lenin Academy by its president deals with the new epoch which he has created for science in the Soviet world. It consists, in the first six sections, of a philosophical-historical-social-political examination of the fallacies, the jargon, and the reactionary pseudo-science of the followers in Western countries and in Soviet lands of Mendel, Morgan, and Weismann. Lysenko shows in simple words how the great Darwin himself introduced a fatal error into his system by studying the "preposterous reactionary ideas" of Dr. Malthus. All these people have been led away from the true path of materialism, which was laid down, it seems, by Lamarck. They have been led either into "feeble Morganistic metaphysics" or into mere idealism culminating in Schrödinger's book *What is Life?* which a Russian geneticist was so unwise as to translate last year into the language of Lysenko.

The next three sections demonstrate the practical value of the teaching of the great Russian plant-breeder Michurin. The evidence is again primarily philosophical. "The organism and the conditions required for its life are an inseparable unity," declares Lysenko. Is it possible perhaps under the Soviet rule to ignore that death (or even imprisonment) separates them? Such mighty truths are interspersed with general statements of achievements, reiterated from Lysenko's tract on "Heredity and its Variability" (translated in 1946 by Dobzhansky), and of theories resting on long-discredited evidence of the inheritance of acquired characters.

These are the foundations of Soviet Darwinism, or, as it is now called, "Michurinism." The tedium of this recital was relieved, however, by the introduction of a new figure in Soviet mythology—always an interesting event. This was a certain Williams, even more obscure than Michurin, who unknown (but no doubt persecuted in his own country) helped the master to create the new science. We shall all watch Williams.

Now, however, comes the first sensational new fact, the announcement that with wheat "after two, three, or four years of autumn planting (required to turn a spring into a winter crop) *durum* becomes *vulgare*, that is to say, one species is converted into another"—one, incidentally, with a different number of those idealistic metaphysical bodies the chromosomes.

After this the feeling of the meeting must have become obvious, even to the speaker, for, after a couple of references to Lenin and Stalin, Lysenko continues:

> "Before I pass on to my concluding remarks I consider it my duty to make the following statement. The question is asked in one of the notes handed to me, What is the attitude of the Central Committee of the Party to my Report? I answer, the Central Committee of the Party examined my report and approved it."

Lysenko then summarized once or twice again what he had said before, and concluded, "Long live the Party of Lenin and Stalin." The Academy endorsed his opinions. On Aug. 26 the leading geneticists (the remnants of those liquidated in 1941) were dismissed from their posts. The Academy itself, the universities, and research stations were ordered to be cleansed, and books conveying Western scientific notions were banned in all educational establishments. Rarely has so small a work produced such great effects.

One footnote may be allowed. Lysenko did not say what deletions the Central Committee of the Communist Party had made before approving his report. One such deletion will be obvious to Lysenko's admirers abroad. There is no reference to last year's uncensored revelation—the notion that there is no competition within species. Some expert in the Central Committee must have noticed that this discovery was slightly at variance with the Marxist theory of the class struggle. The Western professors who have been sweating and tying themselves in knots in imitation of Lysenko's contortions are thus caught in the middle of the act with their eyes shut and not knowing whether to go on coiling or to turn over backwards. It seems indeed to be as ungrateful a task playing at apology as at discovery under the Soviet circus master.

For the publication of this official work the English-speaking world, and men of science in particular, are under a deep obligation to the anonymous translator and to that devoted body the Society for Cultural Relations with Soviet Russia.

C. D. DARLINGTON.

ADVANCES IN SURGERY

Recent Advances in Surgery. By Harold C. Edwards, C.B.E., M.S., F.R.C.S. Third edition. (Pp. 437; 131 illustrations. 24s.) London: J. and A. Churchill. 1948.

This is a book which every surgeon should have. The author has recorded—and with an easy literary style—all the important contributions to surgery since the last edition was published. It is more than a digest of the literature, for he gives a balanced summing-up of all those surgical problems which are in process of being solved and about which divergent opinions are held. The chapters on abdominal surgery are particularly attractive, but what is the meaning on page 146 of the statement, "Fluid absorption is retarded but lymphatic absorption is increased"? This sentence needs elucidation. Mr. R. C. Brock has written an excellent article on thoracic surgery. In discussing the treatment of heart wounds he has omitted all details of operative procedure except the method of approach; yet Harken could scarcely have obtained his extraordinary results without his simple technique for opening into the heart cavities and controlling haemorrhage. As no surgeon is likely to meet more than a very occasional case of heart wound he might naturally in his emergency turn to a book like this to refresh his memory of essential operative details, a book he would be more likely to have than the original papers. On the other hand the technical aspects of pulmonectomy are very thoroughly described.

Mr. D. W. C. Northfield's account of the nervous system is informative, but we do not find quite such a clear summing-up of neurological problems, perhaps because of the intrinsic difficulties of the subject. The statement that "if the cranio-vertebral axis [*sic*] be a rigid container, then in the erect posture the pressure in the ventricles and lumbar theca should be equal and should be the same in the horizontal as in the vertical position" is surely not right hydrostatically. This section, however, is a very good review of neurological surgery for the general surgeon and will be particularly useful for those who are obliged to teach some of the more elementary facts to undergraduate students. Sir Stanford Cade, in the section on radiotherapy, crystallizes the modern outlook of the radiotherapist in a very satisfying manner.

C. A. PANNETT.

MATERNITY NURSE

De Lee's Obstetrics for Nurses. By M. Edward Davis, M.D., and Mabel C. Carmon, R.N. Fourteenth edition. (Pp. 640; illustrated. 15s.) Philadelphia and London: W. B. Saunders Company. 1947.

The latest edition of this book is, like its predecessors, based largely on the work at the world-famous Chicago Lying-In Hospital. It is a grand book, but anyone expecting to find it a pupil-midwives' textbook of the type that we are accustomed to in Britain will be surprised. The difference is largely explained by the fact that in most areas in the U.S.A. the counterpart of our midwife is the obstetric nurse, who does not ordinarily conduct deliveries on her own; she does not even carry out vaginal examinations except on the instructions of the medical practitioner. Only 2½ pages therefore out of more than 600 are on delivery by the nurse—and that merely when the doctor does not arrive in time. The authors' intention, which they successfully achieve, is to supply the nurse with as much knowledge of normal and abnormal obstetrics, including operative and anaesthetic technique, as is necessary to enable her to give competent and intelligent assistance to the doctor. References to the history of midwifery and to famous obstetricians of the past broaden the outlook of the reader and arouse interest. The authors describe in great detail the purely nursing

aspects of hospital and domiciliary obstetrics, the sections on puerperal infection and on the management and disorders of the newborn being particularly good. It is refreshing to find social work and psychiatry emphasized, as well as the importance of the nurse's attitude to the patient and the anxious relatives. The medical teaching is in some places so advanced and condensed as to suggest that the authors presuppose some knowledge of obstetrics in the reader.

There is a wealth of information in this book, often on those matters which, without justification, are usually taken for granted. The authors set down in detail the necessary preparations for each obstetric procedure, including a full list of instruments, dressings, and solutions and how they are sterilized. They also consider various diets for normal and abnormal cases, antenatal and post-natal exercises, and kindred subjects. There is hardly any pertinent point omitted on which the maternity nurse might require information, whether it is how to arrange newspapers to avoid soiling the bedroom carpet or how to prepare for continuous caudal anaesthesia. A 30-page glossary explains in simple language terms which may be unfamiliar to the reader.

There are some statements which might be challenged. For instance, it is surely dangerous to advise that a case of mild toxaemia be treated at home, to be visited only once or twice weekly by the physician. It is doubtful whether a diet of 1,800 to 2,000 calories, however well chosen the items, is adequate for normal pregnancy. On the whole, however, this book deserves nothing but praise, and even obstetricians will find in it much of value as well as interest. It is not suitable as a textbook for pupil midwives in this country, but every training school for midwives should have a copy in its library. The tutor, if not the pupil, will find it useful, as will every sister and staff midwife who works in hospital under conditions which most nearly approach those found in the U.S.A.

T. N. A. JEFFCOATE.

SIDE-TRACKS

An Apple a Day. By Philip Gosse. Drawings by Lynton Lamb. (Pp. 195. 10s. 6d.) London: Cassell and Co. 1948.

It amuses Dr. Gosse to belittle his knowledge of his profession, but readers between the lines may doubt whether he was as incompetent as he likes to pretend and may even suspect that he is enjoying his favourite sport of pulling the legs of his staider colleagues. At any rate we may be thankful that in this bizarre collection of anecdotes, essays, reminiscences, reflections, war memories, and what not he runs true to his best form. He wanders off along side-tracks with the happy zest of Laurence Sterne himself, and with as light a touch, if a less Rabelaisian one. Like Sterne's, too, his good humour is unfailing; it is impossible to imagine him doing an unkindness to anyone, not even to a Civil Servant, or saying anything likely to hurt the feelings of even the most crashing bore. His wit is often of vintage character—but not old in bottle, I should quickly add. Sometimes, admittedly, it sparkles less effervescently than at others.

In a full life he has cultivated many hobbies outside medicine, in which he was never more than moderately interested, as he frankly declares, and he knows how to write entertainingly about all of them. Noteworthy is his description of the enchantment caused by his first sight of the splendour of the Great Court at Trinity, Cambridge, which, he holds, is best viewed from the angle of the kitchen passage. With deference, it can be argued that the top of the steps by the entrance to Hall is an even better standpoint—certainly that was the opinion of a spellbound party of itinerant Swedes whom I encountered at that spot during this year's B.M.A. Cambridge meeting.

The public will like this book for occasional sly digs at pretentiousness in the medical profession; and this is all to the good, for pretentiousness is apt to be one of our failings. It can be recommended to laity and profession alike. May a postscript be added, without captiousness or lack of sodality, that the name of the authoress of *Little Lord Fauntleroy* was not Burdett, and that Sir Robert Hutchison does not spell his name with two "n's"? A word of appreciation of Mr. Lamb's drawing must also not be omitted.

HENRY ROBINSON.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Growth in Relation to Differentiation and Morphogenesis. By J. F. Danielli and R. Brown. (Pp. 365. 35s.) London: Cambridge University Press. 1948.

Papers read at a symposium of the Society on Experimental Biology in 1947.

Intracranial Tumors. By P. Bailey. 2nd ed. (Pp. 479. 55s.) Oxford: Blackwell Scientific Publications. 1948.

An account of the pathology, symptomatology, and treatment of intracranial tumours.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.Ed. 11th ed. (Pp. 196. 8s. 6d.) London: Simpkin Marshall. 1948.

In this part the author discusses the neck, chest, upper limb, and hernia.

Trials of Burke and Hare. By W. Roughead. 3rd ed. (Pp. 412. 15s.) London: W. Hodge. 1948.

An account of the trials of the famous body-snatchers, with illustrations.

Modern Treatment of Peptic Ulcer. By A. Winkelstein, M.D., B.S. (Pp. 205. 30s.) London: Oxford University Press. 1948.

Includes a detailed account of intragastric drip therapy.

Applied Chemistry. By C. K. Tinkler, D.Sc., F.R.I.C., and H. Masters, B.Sc. Vol. II. 2nd ed. (Pp. 284. 16s.) London: Technical Press. 1948.

An account of the chemistry of foods, intended primarily for University of London students taking the course in applied chemistry.

Modern Treatment Yearbook, 1948. Edited by Sir Cecil Wakeley, K.B.E., C.B., D.Sc., F.R.C.S., F.R.S.Ed., F.A.C.S., F.R.A.C.S. (Pp. 344. 15s.) London: Medical Press. 1948.

Articles on diagnosis and treatment for the general practitioner.

Occupational Marks. By F. Ronchese, M.D. (Pp. 181. $5.50.) New York: Grune and Stratton. 1948.

An illustrated account of bodily marks caused by occupation, disease, and hobbies.

Edinburgh Postgraduate Lectures in Medicine. Vol. IV. (Pp. 582. 18s.) London: Oliver and Boyd. 1948.

A variety of articles on medicine and surgery reproduced from the *Edinburgh Medical Journal.*

Textbook of the Rheumatic Diseases. Edited by W. S. C. Copeman, O.B.E., M.D., F.R.C.P. (Pp. 612. 50s.) Edinburgh: Livingstone. 1948.

The aetiology, diagnosis, and treatment of rheumatism are discussed by a number of authorities, and references to the literature are given.

Psychobiology and Psychiatry. By W. Muncie, M.D. 2nd ed. (Pp. 620. 45s.) London: Henry Kimpton. 1948.

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Accounts by a number of authors of cases in which various methods of psychotherapy failed.

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Hemolysis and Related Phenomena. By E. Ponder. (Pp. 398. $6.00.) New York: Grune and Stratton. 1948.

A monograph on haemolysis and the structure of the red cell.

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N.H.S.

No one expected that such a vast scheme as that outlined in the National Health Service Act of 1946 would begin in a way that would please everybody—least of all those upon whom the main burden of the work falls, the medical men and women of this country. The situation is still too confused to give anything like a clear picture of what is happening, but perhaps the most noteworthy fact is the eagerness with which the public has sought to take advantage of a service which, in effect, guarantees the supply, free of direct charge, of everything from wigs to iron lungs. There has been an overwhelming demand for spectacles and dentures, and a run on the chemist shops so fast at times as almost to exhaust the supplies of certain pharmaceutical products. Presumably in time the novelty will wear off and the demand for such things as spectacles will decrease as the numbers of those apparently needing them diminish. This rush of the public for remedies and appliances has put an acute strain upon the medical profession, especially those in general practice. Evidence comes in from all over the country that doctors' surgeries are crowded out, and the doctors themselves deplore that this heavy pressure of work has made it at times impossible for them to give their patients adequate care and attention. If the demand for the doctor's time continues at the present level we can foresee that in the event of an epidemic in the winter the life of the general practitioner in particular will become intolerable. The fact that there has been this huge demand for remedies, appliances, and medical advice may, indeed, be held to indicate that the economic consequences of ill health discouraged many from seeking assistance before July of this year, although the Minister of Health himself has felt obliged to urge the public to use the new Service with prudence and discretion. It would seem that the idea of getting something apparently for nothing has led some members of the public cheerfully to act in an irresponsible way and to disregard the cost which the country as a whole will eventually have to meet. For the first three months of the Service the national bill for eye-testing and spectacles was £981,951; for drugs, £1,905,447; and for dentists (including dentures), £1,232,057: these figures do not include the cost of treatment and appliances provided through the hospital service.

If medical men and women are to continue to give of their best the country at large must act in a more responsible manner and not create circumstances which will exhaust the profession and incidentally discourage those who may be contemplating taking up Medicine as a career. Although no exact figures can yet be given, it seems that a large proportion of those who might well have been expected to pay direct for their medical treatment have, in fact, asked to be cared for under the National Health Service scheme. There has been a much sharper fall in private practice, specialist and general, than was expected by the profession. This is probably a reflection of the hard economic times in which we live, in conditions which fall with particular severity on the professional classes.

Our correspondence columns show that general practitioners from all parts of the country are critical of many aspects of the Service and are especially apprehensive about their economic position. It is not yet possible to assess the volume of discontent or to measure the extent of the economic distress. The Secretary of the B.M.A., in a letter to all practitioners (published in the *Supplement* of Oct. 23), gave a careful analysis of those factors which enter into the general practitioner's income, and recorded the fact that the total available income for general practitioners is now in the region of £45,000,000, as against £28,000,000 that was earned in 1938. In an industrial country such as Britain the majority of general practitioners will receive the greater part of their income from what were formerly described as "panel patients." So, given the numbers which any one doctor may have on his list, it would seem fair to assume that the general practitioner in the big industrial areas should be earning not less than he did before July of this year; but he is having to work very much harder for it, and in conditions which he deplores as unsuitable for the practice of good medicine. The position of general practitioners in rural and semi-rural areas is, however, different, although it will not be possible accurately to assess their economic position until mileage and special inducement moneys have been paid out. Topographical factors alone make it quite impossible for doctors in this type of practice to secure an equivalent income if all those in their district decide to take advantage of the National Health Service. The economic position of medical men and women in such areas is causing concern, and is a matter which the B.M.A. is taking up with a full sense of the urgency of the problem. It is imperative that men in established practices with families to educate and all the other numerous commitments which a doctor has to enter into should not suffer, and we believe, too, that public opinion fully informed of the situation would forcibly assert itself against economic injustice even though this may have been endured by a relatively small percentage of practising doctors. The Remuneration Subcommittee of the Insurance Acts Committee had before it on Oct. 28 an amount of evidence on which it is to assert the economic case of the medical profession. This can be asserted with all the more force in that the medical profession in May of this year decided to do its best to make the National Health Service a success. This it has done at the cost of much time and labour, and the country's sense of fair play, we may be sure, will be behind the medical profession's attempt to secure equitable treatment.

Among the points that have come out in our correspondence columns are the proposals that the capitation fee should be increased and fixed, that separate funds should be established for mileage and basic salary, and that there should be a reduction in the numbers of persons any one practitioner should have on his list. Another point is that

the maximum of £400,000 for special inducement payments should be reconsidered. It is well to recall that the Government gave general approval to the Spens Report on the Remuneration of General Practitioners. In terms of the 1939 value of money, it may be remembered, the Spens Report recommended that between the ages of 40 and 50 approximately 50% of general practitioners should receive net incomes of £1,300 a year or over, that 75% should receive net incomes over £1,000 a year, that approximately 25% should receive net incomes of £1,600, that less than 10% should receive a net income of £2,000, and that it should be possible for a small proportion to receive net incomes of at least £2,500. These figures, it may be emphasized, are *net* figures and in terms of the 1939 value of money. The medical profession is at the moment doing its job in extremely difficult circumstances, and it is up to the Government to meet promptly the causes of discontent which now prevail.

FACTORS IN INFERTILITY

In a paper[1] published in this *Journal* in 1946 on the subject of the receptivity of cervical mucus to spermatozoa Dr. Mary Barton and Dr. B. P. Wiesner continued their combined clinical and biological studies of infertility. They then put forward the view that cervical hostility may be due to various factors including general debility, oestrogen deficiency, and local infection. Further work on these particular factors and their interrelations is reported by Drs. Barton and Wiesner in the opening pages of this issue. The authors selected infertile women aged between 30 and 40 in whom the main cause of infertility was considered to be hostility of infected cervical mucus to spermatozoa. The infecting organisms were predominantly of intestinal type, and the women were all more than 10% heavier than the mean weight for their age and height. After excluding those women in whom the cervical mucus regained normal receptivity after treatment with oestrogens, antibiotics, and local applications, 88 remained to form the subjects of the investigation.

In the first 14 cases the resistant cervical infection was treated by means of a sucrose-free diet, supplemented by lactose with the object of encouraging the growth of favourable intestinal flora. The authors have not included reports of the results of subsequent bacteriological examinations, and there is no mention of whether their objective was attained. In nine of the 14 cases, however, the cervical mucus became normal, mostly after resumption of treatment for the infection in addition to the special diet. It appeared at this stage, however, that the response to treatment was better in those patients who lost weight on the diet, and therefore the remainder of the women were not given lactose. Results of the same order were obtained. Altogether in 62 of the 88 cases the cervical mucus returned to normal, and indeed in not less than 30 cases conception ensued. The percentage of successful results was more than five times higher in the patients who lost weight than in those who did not. It has often been noted that some types of obesity, in man as well as woman, are associated with lowered fertility. Usually, however, it would appear that the obesity is then part of some endocrine disturbance which also includes impairment of gonadal function. Many workers have reported that reduction in weight, usually brought about by a diet of lower calorific value and by the administration of thyroid, can increase fertility. Barton and Wiesner attempted to exclude this type of case by requiring evidence of the regular occurrence of ovulation, and they maintain that reduction in weight brought about by a sucrose-free diet of high calorific value helps to restore the normal cervical function, though how it does so is not clear.

A relation between nutrition and reproductive efficiency exists in some animals, but the results of animal experiments have not always been applied scientifically to human beings. One of the best examples of this concerns vitamin E, which has been used extensively in the hope of improving the fertility of both man and woman. It now seems generally agreed that it has little if any value, and this was the consensus at the recent annual conference held by the Family Planning Association in Exeter.[2] This is not surprising when it is remembered that the original experiments on which the treatment was founded showed that vitamin-E deprivation causes abortion but not infertility in female rats[3] and in the male leads to testicular degeneration which is irreversible.[4]

It is always difficult to assess the importance of any one infertility factor, and this is particularly true of conditions such as obesity and cervical hostility. Thus it was often noted, at all events before the war, that some women in the poorest section of the population living mainly on starchy foods were both remarkably obese and fertile. Again, although much has been written on the importance of the mucous barrier in the cervix, it seems wise to retain a healthy scepticism. There is still disagreement among workers in this field, and the importance of the quality and quantity of mucus in an apparently healthy cervix has never been convincingly established. Pregnancy, in fact, frequently occurs despite the presence of obvious cervical infection, and Barton and Wiesner admit that a spontaneous restoration of normal cervical function occurred in one of nine untreated cases within six months.

Although the state of the cervical canal almost certainly affects fertility, there may have been a tendency in recent years to exaggerate its importance, sometimes to the neglect of what might be termed fundamental investigations. A carefully taken personal and marital history of the infertile couple together with general and local examination of them both will often indicate the fault or at least give a guide to it. In a large percentage of the remaining cases the probable cause will be discovered from the results of investigations which are now almost routine. First, thorough and repeated analyses of a complete specimen of semen should be undertaken. Semen removed from the vagina after coitus is unsatisfactory for this purpose. In the woman tests for ovulation are carried out and also

[1] *British Medical Journal*, 1946, **2**, 606.
[2] Family Planning Association Conference on Infertility, reported in *Lancet*, 1948, **2**, 542.
[3] Mattill, H. A., Carman, J. S., and Clayton, M. M., *J. biol. Chem.*, 1924, **61**, 729.
[4] Mason, K. E., *Sex and Internal Secretions*, 1939, p. 1189. Edited by Allen, E., Baltimore.
[5] Vaux, N. W., and Rakoff, A. E., *Amer. J. Obstet. Gynec.*, 1945, **50**, 353.
[6] Elden, C. A., ibid., 1938, **35**, 648.
[7] Kane, H. F., ibid., 1936, **32**, 110.
[8] *J. Obstet. Gynaec. Brit. Emp.*, 1939, **46**, 857.
[9] Ibid., 1938, **45**, 932.

endometrial biopsy (which sometimes reveals an unsuspected tuberculous infection). Insufflation of the tubes is not a completely reliable guide to tubal patency and should be supplemented by hysterosalpingography with screening; and again the result of one test is not conclusive. Moreover, even when the tubes are patent careful study of hysterosalpingographs may reveal adhesions interfering with the passage of the ovum from the ovary to the abdominal ostium. Post-coital and *in vitro* tests of cervical mucus with a view to determining its receptivity to spermatozoa are supplementary to the above, and for practical purposes are really necessary only when the cause still remains in doubt and when dilatation of the cervix and the passage of gas or other medium have failed to have a therapeutic effect.

But what of the cases in which all the tests are negative and no cause is found? Mr. Christie Brown, whose paper also appears in this issue of the *Journal*, points out that sometimes childlessness may result not from the failure of fecundation but from the inability of the fertilized ovum to embed itself successfully in an endometrium not fully secretory in type. He treated a number of patients on this assumption—for it is not proved—with 0.6 mg. "dienoestrol" and 10 mg. "ethisterone" daily from the expected date of ovulation to the beginning of the next period or, if conception occurred, until the 18th week of pregnancy. This dose of ethisterone might almost be called homoeopathic when it is remembered that it is probably equivalent to only about 1.5 mg. of progesterone by injection; yet he reports that at least 38 out of 111 patients became pregnant within six months of starting this treatment. The results of any treatment for infertility are not easy to assess, and it is rarely justifiable to claim a cure. Mr. Christie Brown also reports good results with his regime in cases of habitual abortion, another condition in which it is difficult to relate treatment and outcome. Apparent success in such cases has been reported by others who employed much larger doses of oestrogen and progesterone[5] or of progesterone alone.[6,7] Among the latter MacGregor and Stewart[8] dryly comment that "there is almost an air of the miraculous about the results reported on doses which are almost infinitesimal in comparison with the amount of progesterone produced in normal pregnancy." It should be noted, too, that an almost equal measure of success is claimed for other therapeutic agents, including thyroid, vitamin E, blood serum, and even cold baths. Workers in this field should always keep in mind the findings of Malpas[9] on the spontaneous cure rate to be expected in cases of repeated abortion.

The subjects of sterility and abortion bristle with difficulties when it comes to the appraisal of probable causes and the results of treatment. There has been so much loose and inaccurate thinking and writing in this field that Swyer[2] has recently found it necessary to present a paper criticizing some of the papers on infertility which have been published during the last two years. If a scientific outlook is essential for the advancement of knowledge a proper perspective is important in the interests of the patients. Over-zealous and misguided inquiry and treatment can convert a complaint into an obsession, to the detriment of health and marital happiness.

PRESIDENT TRUMAN AND MEDICINE IN THE U.S.A.

With Mr. Truman as President, and with a Democratic majority both in the Senate and in the House of Representatives, it looks as if the Federal Government will go ahead with plans which have been described by Senator Taft as "a socialistic monstrosity." Early this year Mr. Truman asked Mr. Oscar R. Ewing, the Federal Security Administrator, to undertake "a comprehensive study of the possibilities for raising health levels and to report upon feasible goals which might be realized by the American people in the next decade." Mr. Ewing presented his report, a summary of which appears on page 869, to the President on Sept. 2, but it is doubtful if anyone except the President himself believed that the recommendations made in the report would ever be matters of practical politics. The whole outlook has now changed, and the coming struggle between the Government planners and those who abhor all their works promises some bright displays of fireworks.

Few Americans would to-day disagree that their medical services could not be greatly improved; it is the method of making improvements which provokes controversy. In a comprehensive survey of the American medical services Professor T. McKeown[1] points out that at least 25% of the counties are without basic public health services, 40% have no registered hospitals, doctors are very unevenly distributed, and the costs of medical care are quite beyond the means of many people who are either not protected or are inadequately protected by voluntary insurance. The need for more hospital beds led to the passing in 1946 of the Hospital Survey and Construction Act. This law requires States to submit plans to the Surgeon-General for a complete hospital service based on comprehensive surveys, and the regulations set forth standards for the number of beds to be provided in various categories. This Act was conceived in the House of Delegates of the American Medical Association, and it was supported by all sections of medical and political opinion mainly because the hospitals are to be developed under State and not under Federal control and because provision is made for hospital buildings but not for the staff required to operate them. Professor McKeown remarks in his paper that American experience is no exception to the general rule that fundamental changes in the organization of medical services seldom occur without widespread political controversy. In the Senate hearings on the Murray-Wagner-Dingell Bill (for a prepayment medical service similar to our own N.H.I.) official expressions of opinion were presented by organized labour, the American Association of Manufacturers, the Chamber of Commerce, the Farmers' Union, the National Lawyers' Guild, the League of Women Shoppers, and many other organizations. Apart from the opposition of the American Medical Association, the States of the union have no wish to see the Federal Government intrude on local affairs, and at present health is certainly included among such affairs. The Federal Security Agency, which is responsible for the Federal

[1] *Brit. J. soc. Med.*, July, 1948. In the press.
[2] *British Medical Journal*, 1948, 1, 645.

health services as well as education and social welfare, is not a cabinet department, though there is a Bill now under discussion to provide for the establishment of a cabinet department of health, education, and security.

In preparing his report Mr. Ewing consulted many persons inside and outside the Government, and in particular has been guided by the findings of the 800 persons who met in the National Health Assembly in Washington in May of this year. The Medical Care Section of this Assembly unanimously agreed that "the principle of contributory health insurance should be the basic method of financing medical care for the large majority of the American people." Mr. Ewing points out that there was disagreement on how such insurance should be effected, but he finds himself compelled to recommend a scheme of national health insurance. This is likely to give rise to considerable controversy and to be opposed by the American Medical Association. It may be recalled, too, that in the series of investigations conducted by the New York Academy of Medicine and reviewed in these columns[2] the conclusion was reached that health insurance should be conducted on a voluntary basis. In Mr. Ewing's view a satisfactory system of health insurance should provide: "(1) That everyone should have ready access to adequate health and medical services; (2) that everyone should have the kind of services, and all the services, he needs to promote better health; and (3) that everyone should be able to obtain these without regard for the level of his personal income." These criteria, he observes, go beyond any voluntary insurance plan. He considers that only about half the families in the U.S.A. can afford on a voluntary basis even a moderately comprehensive health insurance plan. He provides arguments against the six principal objections to a Government health insurance, namely: "(1) That Government health insurance is socialized or State medicine; (2) that it is compulsory; (3) that it would be highly centralized and would concentrate too much power in Federal Government; (4) that there are not sufficient personnel and facilities to make it effective; (5) that it would cost too much; and (6) that it would open the way to over-use and other abuses and would lower the quality of medical services." Socialized or State medicine, Mr. Ewing observes, means that the Government owns and operates all hospitals, and that practising physicians are employed by the Government on a salary basis; but this is not the plan laid down in his report. There would be full freedom to doctors, hospitals, and other health agencies in deciding whether they would participate in the scheme, and the method and rate of payment would be matters for negotiation. Compulsion to contribute would be no innovation, because payments for unemployment and old-age insurance are compulsory: "The benefits of these systems are well established, and they are an accepted and valuable part of our American way of living." The administration of the plan would rest mainly with the States, and the part of the Federal Government would be to aid the State programmes and "to handle the finances of the total system." As to shortage of personnel and facilities, this is recognized, but Mr. Ewing considers that his plan will provide for the increase of medical manpower and facilities. He considers that the cost of running a national health insurance scheme would be less than the expenses involved in the voluntary non-profit plans. He examines carefully the charge that a system of Government health insurance "would inevitably lower the quality of medical service." In the pattern of legislation recommended in his report Mr. Ewing is confident that the insurance system "should be fully insulated from 'politics' of all sorts, so that purely medical concerns are left in the hands of the physicians and there is no unwarranted interference or 'political control of medicine.'" The views of the Republican Party were summed up by Senator Taft in these words: "We have adopted in this country as a supplement to the private system the principle that the Government will supply through the State . . . a minimum standard of subsistence, of housing, of medical care, and of education for every citizen. The minimum standard cannot be so high as to destroy the interest of men in securing something better through their own efforts. . . . Assistance in providing medical care should be confined to the group unable to pay for doctors' services so that there be no socialized medicine. . . . Initiative and administration should rest on the local and State authorities."

We may therefore expect to see medicine the centre of a lively political struggle in Congress, with President Truman using the great personal victory he has gained to enforce Mr. Ewing's plan. The medical profession in this country will watch with interest and sympathy the way in which the American medical profession will meet a situation which a few weeks ago the assessors of public opinion in the U.S.A. suggested would be postponed for at least another four years.

ORAL PENICILLIN IN CHILDREN

An important question in connexion with penicillin treatment is the extent to which oral administration is justifiable. Against the single advantage of convenience must be set its extravagance, the dose required being at least five times greater than that injected, and the grave disadvantage of marked irregularity of absorption. All observers who have carefully studied its effects have noted that absorption varied widely from case to case, with the result that in any series of patients some will inevitably absorb only inadequate quantities of a dose which will suffice for others. The general adoption of the oral route also opens wide possibilities of misuse, particularly the self-treatment of venereal disease. Giving penicillin by mouth to infants and children, however, is a rather different matter: they are naturally less tolerant of injection and require oral doses on a less extravagant scale. Two years ago Buchanan[1] suggested that infants under six months should absorb penicillin better than older children and adults because of the low HCl content of their gastric juice, and her own observations on 25 babies supported this. Satisfactory blood levels were obtained by adding penicillin to feeds in amounts equivalent to a daily dose of only 4,000 units per lb. (454 g.) of body weight.

Various authors, including Suchett-Kaye and Latter[2] in this *Journal*, have reported favourably on the treatment of acute infections in young children with oral penicillin. Two publications on this subject, both from the U.S.A., tend rather to emphasize the limitations of the method

[1] *Lancet*, 1946, **2**, 560.
[2] *British Medical Journal*, 1947, **2**, 953.
[3] *Amer. J. Dis. Child.*, 1947, **74**, 19.
[4] *J. Pediat.*, 1947, **31**, 195.

than to acclaim its efficiency. Reisman and his colleagues[3] begin with the disquieting statement that "several children have been admitted to the wards of the Queen's General Hospital with advanced pyogenic diseases of various types after ineffective oral treatment with penicillin at home." They add that such treatment frequently makes the causative organism more resistant, but the implication that resistance has been acquired *in vivo* would have to be confirmed. They themselves treated 22 children, most of whom had upper respiratory tract infections, with large doses of oral penicillin, from 50,000–1,000,000 units being given every hour by day and every two hours by night. The results were "fair" in 12 patients; in the remaining 10 there was no apparent effect. In the majority no penicillin was detected in the blood, which is surprising in view of the amounts given, but this may perhaps be explained by irregular administration: case 4, for instance, receiving "1,000,000 units every hour while awake and every two hours while asleep" for five days, is stated to have had a total dose of only 7,800,000 units—an unexplained discrepancy. The patients' ages are not stated, and there are no bacteriological data. Possibly some of the infections may have been caused by insusceptible organisms. The more valuable part of this paper is a study of absorption after oral administration; this again emphasizes what many previous authors have observed—namely, the importance of an empty stomach if absorption is to be adequate. Buffers and tablets were found to have no advantages, a simple solution in water being recommended.

A similar study was made by Markowitz and Kuttner.[4] They gave a standard oral dose of 50,000 units to children at various times before and after meals, and found that a satisfactory blood level was usually maintained for two hours only when the dose was given after a 4-hour fast. According to these findings the continuous maintenance of a therapeutic blood level by the oral administration of any reasonable dose must be impossible. It may well be concluded that older children should be treated like adults and given penicillin intramuscularly, at least in the first stage of the treatment of any severe infection. The form of oral treatment with penicillin which has the best justification is the addition of the drug to the feeds of infants in the way suggested by Buchanan.

SAFER MILK TO COME

Once more, this time by Dr. Wyndham Lloyd in a recent Chadwick lecture which is reported on another page, the attention of the country has been drawn to the tragic fact that in England and Wales each year just under 2,000 people die of bovine tuberculosis. This takes no account of morbidity—the number of persons who need treatment must amount to several thousands—nor of the waste of time, money, and hospital facilities that the treatment of this large number of patients must involve. These deaths and this waste are preventable. The infection is caused by drinking milk drawn from the udder of a cow which is suffering from tuberculosis. In a letter appearing in *The Times* of Oct. 30 Lord Bledisloe has pointed out that Great Britain, with about 40% of her cattle infected with tuberculosis, is at the bottom of the list for Western Europe, while in the U.S.A. and in Canada the figures are 0.5% and 2% respectively. The Danish agricultural attaché has stated that in 1947 in his country 97.4% of the cattle were healthy. It should surely be possible to improve upon our own deplorable figure.

But an improvement in the health of our dairy herds is not enough. There is an urgent need for much more pasteurization of raw milk. About one-quarter of the milk supplied to schools is neither from a T.T. herd nor has it been pasteurized; and this is given by local education authorities to children when they are at an age highly susceptible to bovine tuberculosis. There is no danger in pasteurization, and the process has the additional positive advantage that it destroys organisms of the *Salmonella* and other groups. The amount of vitamin C in milk—the destruction of which is used as an argument by those who oppose pasteurization—is small. There are, however, objections to relying upon only one method of making milk safe for the consumer. Tuberculin-tested milk has come originally from a healthy cow, but infecting organisms can easily gain access to milk between the cow and the consumer, while pasteurized milk may become reinfected after pasteurization—to the great detriment of children under the age of 2 years. Further, the installation of pasteurizing plant in rural areas is impracticable. The building-up of healthy herds must therefore be encouraged while at the same time much more milk is pasteurized than hitherto. In his speech at the opening of Parliament His Majesty said that proposals would be laid before the Houses "to provide for a safer milk," and it is to be hoped that these proposals will concern both the Ministry of Health and the Ministry of Agriculture; in this way the promise given by the Government to Lord Rothschild, when he raised the question in the House of Lords in April, 1946, will be fulfilled.

CEREBRAL ABSCESS AND CONGENITAL HEART DISEASE

Although cerebral abscess has been recognized as a complication of congenital heart disease for at least 68 years—Ballet[1] described it in 1880—it is not generally known that it is the cause of death in about 5% of all cases. Gates, Rogers, and Edwards[2] have recently reported five fatal cases from the Mayo Clinic. Fallot's tetralogy, which is the underlying lesion found in 50% of recorded cases, was present in two of these, but two others had nothing more than an atrial septal defect. Bacterial endocarditis was absent in all. The authors point out that the abscess is commonly solitary and may be amenable to surgical treatment. There can be little doubt that the cause of the abscess is paradoxical infected embolism, and therefore it occurs only with permanent, transient, or intermittent veno-arterial shunts. It has been seen in association with an arterio-venous aneurysm of the lung. Although cerebral abscess has not yet been reported following cardiac catheterization in this country, the procedure should be undertaken with special care in patients with congenital heart disease who are known to have a right-to-left shunt. It is never safe to clear a blocked catheter by means of pressure from a syringe; the catheter must always be changed. To prevent accidents a suitable dose of heparin should be injected at the start (50 mg. for an adult, about 25 mg. for a child of 8–12); and 100,000 units of penicillin, three times daily, should be given during the subsequent 48 hours.

Dr. J. A. Charles, F.R.C.P., will deliver the Bradshaw Lecture on "Victorian Medical Administrators and Their Significance for To-day" before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday, Nov. 23, at 5 p.m.

The next session of the General Medical Council will open on Tuesday, Nov. 23, at 2 p.m., when the President, Sir Herbert Lightfoot Eason, will take the chair and deliver an address.

[1] *Arch. gén. Méd.*, 1880, **145**, 659.
[2] *Proc. Mayo Clin.*, 1947, **22**, 401.

MEDICINE IN THE U.S.A.

REPORT TO MR. TRUMAN

At the beginning of the year President Truman requested Mr. Oscar R. Ewing, Federal Security Administrator, to "undertake a comprehensive study of the possibilities for raising health levels and to report . . . upon feasible goals which might be realized by the American people in the next decade." The report, entitled "The Nation's Health," has now been published, and amongst its main recommendations are the training of more doctors, dentists, and nurses, the building of more hospitals, compulsory health insurance for all employed persons and their dependants, improved care for children and the chronic sick, the rehabilitation of the physically and mentally handicapped, and the local integration of all the health services.

The Need for Doctors

In order to estimate the total number of doctors required, Mr. Ewing has chosen as an approximate indication of the proper standard the present average figures for the top twelve of the 48 States. This works out at 667 people for each doctor. Such an increase of doctors even at the end of ten years is admittedly impossible, and Mr. Ewing sets as a goal for 1960 a net gain of 15,000 doctors, 5,000 dentists, and 17,500 nurses over the numbers which would be produced at currently expected rates. To obtain the 15,000 additional doctors Mr. Ewing recommends that medical schools must be expanded, new ones built, and Federal scholarships awarded to needy students. Perhaps it is significant of the U.S.A. that he estimates that the output both of trained psychiatrists and of paediatricians needs to be three times the present rate. A lowering of existing barriers against negroes entering State and private medical schools would assist in overcoming the deficiency.

From the conclusion that medical schools can be expanded by no other means than by using public funds the report recommends that $40 million a year in Federal funds should be made available as a beginning only for salaries, equipment, and construction. The question of Federal medical scholarships is more complicated, since this constituted a major part of the recommendations of the very able professional President's Committee on Higher Education of 1947, but it is emphasized that in planning medical scholarships with Federal funds care should be taken that medical schools, through taking students later than other professions, would not be cheated of the most promising scholars.

Hospital Beds

The lack of hospital beds is even greater, largely because of the uneven distribution of the national wealth between the States. And it is the States, primarily, which must take the initiative in building up the hospital service. At present almost three-quarters of general hospital beds in the U.S.A. are operated by non-profit voluntary organizations; even in the boom year of 1946 their average annual deficit ran to 13% of total costs. The national goal is taken from basic standards set by the States themselves under the Hospital Construction Act of 1946. This sets a basic standard per 1,000 population of 4.5 general hospital beds, 2 beds for the chronically ill, 5 beds for mental patients, and 2.5 sanatorium beds—a round total of 14 beds per 1,000 people. By this standard the United States, with 900,000 "acceptable" hospital beds, has less than half the hospital capacity it really needs.

At present the Hospital Construction Act adds one Federal dollar for every two raised from State and local resources. In most States no laws have yet been passed to meet the Federal offer. According to the report, "Many areas of the country cannot finance new hospitals either because they cannot contribute enough towards construction or because even if hospitals were built the local income levels are so low that sufficient income for hospital operation and maintenance cannot be guaranteed." Indeed, 40% of American counties have no general hospitals at all. From this analysis Mr. Ewing concludes that the Federal Government must not only assist in building new hospitals but will have to subsidize the maintenance costs of voluntary hospitals. Even by doubling present budgets the further 900,000 beds needed could not be constructed in under 15 years. The Federal share of costs, moreover, should be raised from a third to 40% for construction, and in special low-income areas also to 40% for maintenance—the States providing another 40%.

Health Insurance

At the combined lay and professional National Health Assembly held in Washington this spring the Medical Care Section could agree only that "the principle of contributory health insurance should be the basic method of financing medical care for the large majority of the American people, [and] should be accompanied by the use of such tax resources as may be necessary to provide additional services for special groups and services not covered by prepayment or insurance." But it admitted a deep division between the American Medical Association and many of the lay delegates from national social and labour organizations regarding whether a National Health Insurance plan was necessary to achieve this end. Mr. Ewing concludes that compulsory national health insurance is necessary. According to his report voluntary prepayment plans do not generally provide for hospital services for more than a limited period or for mental, venereal, or tuberculous patients. Voluntary plans offering physicians' services fail to provide in general for care outside the hospital. But the chief objection against them is at bottom a financial one—either services offered must remain incomplete or the costs must be raised, with the result that only the affluent will be able to afford the contributions. Present charges for prepayment plans in the U.S.A. range from £12 to £18 a year. According to the report this already excludes all the 18 million Americans dependent on incomes of less than £250 a year, most of the families with £250–500 a year, and about 70% of the £500–750 a year group. The net result already is to rule out the lower half of American families.

Scheme for Employees and Dependants

The fact that by these plans, in or out of the Blue Cross organization, a flat rate is charged irrespective of income has plainly influenced Mr. Ewing to suggest that contributions for national health insurance should be based on a percentage of the employee's wages. Learning perhaps from British difficulties, he advises a three-year "tooling-up" period after the necessary legislation has been passed by Congress before any benefits under the scheme are made available. In this period procedures in each State and locality could be minutely worked out, machinery set up, and people thoroughly informed of what they were entitled to and under what conditions. Even then services under the insurance scheme would be related strictly to available resources. Later these resources could be expanded and improved until the full scheme was in operation.

No detailed limits are set in this report for the scope of the compulsory insurance beyond saying it should be as broad as possible and should cover dependants. It is insisted that legal guarantees should be given to insured persons of complete free choice of physician, dentist, or hospital, that all personal records should be confidentially kept, and that there be a right of appeal to proper committees and even courts against administrative decisions. The medical profession, on the other hand, would also receive legal guarantees that participation in the scheme would be by free choice, that their right would be protected to accept or reject individual patients, to retain control of professional aspects of professional service, to choose the method of payment, to negotiate rates of payment through representatives of their own choice, and to have a corresponding right of appeal against administrative decisions. Administration of the scheme would be by a small board of full-time members, who would be both professional and lay. The board would be so constituted as to co-ordinate the insurance scheme with other social security and public health programmes. The members would be aided by a larger advisory council representing the interested public, the consumer, and professional groups. The details of administration could be designed to fit in with existing social security agencies.

The complete plan—at some unspecified date after 1952—would at least cater for those Americans already protected by social

security legislation for old age and other benefits—about 85 out of 140 millions—with in addition farmers and agricultural labourers at present excluded. Complete services of general practitioners and specialists would eventually be made available, though at first this would be difficult. Hospitals also would be open to insured persons, though they would continue to be autonomously governed by their existing managers. Extra charges for private rooms and, at first, for long stays would be necessary. With dental care, too, full provision would at first be impossible, and it might have to be limited to children. Nursing services again might have to wait on long-term improvement in some areas.

Mental Health

Plans for improving mental health are also proposed. The report quotes some interesting figures to show prevalence of mental illness. Ten per cent. of the men examined for military service during the last war were rejected for neuro-psychiatric disorders. In addition to these nearly 500,000 developed mental ill-health at a later date. The loss in military man-power from these causes totalled nearly 2,000,000. It is estimated that 8,000,000 persons in the U.S. are suffering from mental disease.

At the present time the nation has 4,500 psychiatrists, 5,500 nurses working in psychiatric hospitals, and 1,000 qualified psychiatric social workers. It is estimated that $75,000,000 must be devoted to training-centres and grants for students in order to overcome these very serious shortages, which are worst in the State mental hospitals. Chiefly through lack of space there is overcrowding in these hospitals ranging from 20 to 70% above accepted standards. They suffer from a 50% shortage of attendants and an 80% shortage of trained nurses. Public mental hospitals have one-quarter of the number of psychiatrists needed. The present patient-day cost is said to be only $1.50. In addition to measures aimed at remedying these conditions the report advocates the increase of the existing 600 psychiatric clinics to a number which would provide one for every 100,000 persons.

The Chronic Sick

Under the heading "Healthy Maturity" the report advocates increased research programmes in geriatrics and chronic disease. It estimates that 70% of sufferers from such diseases can be treated at home. To meet this an additional 50,000 public health and visiting nurses must be added to the present 21,500 in existence. Housekeeper services, group living, and foster-homes are also advocated. An additional quarter of a million hospital beds are recommended to supplement the 39,000 which are at present believed to be available for the chronic sick. Both specialized hospitals for chronic disease and chronic units in general hospitals are recommended.

Vocational rehabilitation is already attempted, but the scale is inadequate. Each year 9,000 persons are rehabilitated out of an annual requirement of a quarter of a million. The major share of this work still falls upon voluntary agencies. It is calculated that an increase of Federal appropriations from $18,000,000 to $70,000,000 and State appropriations from $7,000,000 to $30,000,000 would supply the nation with a complete rehabilitation service.

The remainder of the report deals with an extension of child health services at an estimated cost of $430,000,000 a year and the development of local health units each staffed by one full-time medical health officer per unit, one additional full-time public health physician for each 50,000 population, one full-time nurse for each 2,000 to 5,000 population, one sanitarian for each 15,000 population, one health educator for each 50,000 population, and one clerical worker for each 15,000 population. For this purpose an initial appropriation of $40,000,000 rising in five years to $50,000,000 is suggested.

Finally, Mr. Ewing discusses the broad framework within which these services would operate and the importance of integration between the medical centre, district and community hospitals, and rural clinics. The report ends, "If the people will get together—professional workers and public representatives alike—in citizen health councils throughout the country, we will have the satisfaction of proving not only that health is everybody's business, but that it is good business, essential business, and successful business."

PREVENTION OF TUBERCULOSIS
ENVIRONMENTAL FACTORS

A Chadwick public lecture was given on Nov. 2 at the Westminster Hospital Medical School by Dr. WYNDHAM E. B. LLOYD, tuberculosis officer for South Devon, on the subject of the prevention of tuberculosis with special reference to environment.

Dr. Lloyd said that tuberculosis was not a mere disease; it was a social and economic problem. It struck down alike the adolescent, the breadwinner, and the housewife. It was an infectious disease, the infection being of two types, human and bovine. Its prevention should be simple, but in fact it was a problem of extraordinary difficulty. Tuberculosis began insidiously; the sufferer remained infectious for very long periods, and it was not acquired by one unlucky contact but, for the most part, after massive doses of infection over a long period. The incubation period was very variable; in some cases the first detectable signs of tuberculosis might develop years after the patient had been removed from a source of infection.

To prevent infection the first step was to discover which individuals already had the disease. It was necessary to examine not only the patients but all with whom they had been in direct contact. The examination had to be carried out from two points of view: the ascertainment of the source from which the patient might have acquired the infection, and the direction in which he might have imparted it. It was a fact that among contacts there was a larger proportion of people with tuberculosis than in the ordinary population. When cases were found they must be treated and educated so as to be no longer a danger to others.

The Tuberculosis Service

To deal with this apparently simple problem a great tuberculosis service had grown up. It began with voluntary effort. In 1911 the National Health Insurance Service came into being, and in 1912 the present scheme was launched, the purpose of which was to ensure that no sufferer should go undetected and untreated. Patients were sent to the tuberculosis officers by their own doctors, and the first step was diagnosis. Clinical, bacteriological, and *x*-ray examinations were undertaken. Contacts were also called for examination. Mass miniature radiography was now available.

The treatment of the patient was based on food, rest, and fresh air, although more active measures, such as artificial pneumothorax, were adopted in suitable cases. If all these methods failed or the case was unsuitable for such treatment a chronic case remained with an infection which might exist for years. It was not practical politics to segregate these people permanently, and with proper instruction and reasonable living conditions they were not a danger to others. It was all a matter of good housing, cleanliness, and common sense.

Too much stress could not be laid upon environment in the prevention of tuberculosis, but the word must be interpreted in the widest terms. It included adequate housing, water supply, proper ventilation, absence of overcrowding. Children must have sufficient diet to build up resistance, and there must be freedom from want, from fear, and from insecurity Having put a patient in a sanatorium, it was no use sending him back to a overcrowded slum where he could not put into operation what he had been taught. Contacts must be examined and submitted to *x*-ray inspection every three months for at least two years. Every member of the household, young or middle-aged, must be examined. The main reservoir of infection was the sputum-positive person who did not know or care. Tuberculosis was sometimes found in the middle-aged person who had had bronchitis for years, and on looking into the family history it might be found that a baby had died of tuberculous meningitis, or an adolescent had died of the disease many years before, and the parents had never been examined and were spreading infection undetected all the time. Many of these chronic carriers felt perfectly well; if they had a cough it was put down to bronchitis, or possibly to smoking. The problem of finding these carriers was acute, although mass radiography was of much assistance. Their numbers were great and segregation would not be practicable, so that the obvious recourse was education. The patient must be taught how to dispose of sputum; the need for keeping separate from those of others his eating and drinking utensils and his personal linen must be impressed upon him, and he must be instructed to avoid kissing and fondling

children. These were common-sense measures to be taught at sanatoria and by the staff of the tuberculosis officer, which should include health visitors, who would attend the clinics, particularly on older patients' days, so that they could get to know the people and their families. Personal contact was important, and it was as a friend of the family that the health visitor must appear in the home.

If housing accommodation was unsuitable, better accommodation should be asked for on behalf of such patients. Housing committees must be made aware of the fact that if tuberculous families were not provided with proper housing nothing would stay the disease. In country districts shelters might be set up in the garden so that the tuberculous person lived away from the other occupants of the house.

In a passing reference to bovine tuberculosis Dr. Lloyd said that the methods of preventing spread due to drinking milk from infected herds ought to be simple to apply. All milk not taken from tuberculin-tested herds should be heat-treated, and no one suffering from the disease should be allowed to handle the herds or the milk. Some schools still provided children with raw, untreated milk, and this should be remedied as soon as possible.

Present Position

At first sight the results of the work done in combating tuberculosis seemed very unsatisfactory. Infections were increasing, the total of known cases of the disease was greater, and waiting-lists for sanatoria were very long. But the position was not quite as black as it might seem. More cases were known, but that was not to say that more existed. Notifications were no indication of the increase of the disease, for the more the research was intensified the greater the number of cases which would be found. The larger the number found the better would be the position from the standpoint of prevention, and it was not until all cases were discovered that it could be said positively that new cases were on the decrease. The most reliable guide was the number of deaths reported, although this also must be regarded with caution. Twenty years ago not nearly as many people with chronic coughs had x-ray examinations as was the case to-day, and the cause of death was often certified as bronchitis. Between 1914 and 1943 the crude death rate for pulmonary tuberculosis had been reduced by more than 50%, but the figure for 1943—the year with which the most recent report of the Registrar-General was concerned—was not so good as the figure for 1942.

The scheme which had been taken over by the regional boards under the new Act was to be reviewed by March, 1949. It was to be hoped that all available resources would be mustered for an intensification of the methods of treatment and prevention. More doctors, more radiographers, and increased nursing staff in hospitals and sanatoria were needed. Many beds were empty because of lack of staff. More mass radiography units should be available. But what was most needed, said Dr. Lloyd in conclusion, was public enlightenment. Large numbers of the public did not realize how important it was that they should co-operate with the tuberculosis service. Only when that co-operation was fully forthcoming would tuberculosis become a really preventable disease.

THE NEW PHARMACOPOEIA

EXPERT WORK OF THE COMMISSION

The Pharmaceutical Society of Great Britain has arranged a series of lectures on the new *British Pharmacopoeia*. The introductory lecture was given by Dr. C. H. Hampshire, secretary of the Pharmacopoeia Commission, on Oct. 28. Before him on the table were all the seven volumes of the *Pharmacopoeia*, the earliest, a small volume in black binding, dated 1864. Dr. Hampshire touched first on the question of nomenclature. Apart from a few minor changes, he said, the nomenclature followed the system employed in previous volumes. An unfortunate position was created by the issue of the same drug under a variety of proprietary names given it by different manufacturers. The intention now was to provide non-proprietary names which could be used by all manufacturers, and if the drug was eventually included in the *Pharmacopoeia* the approved name would be given to it. The selection of drugs for inclusion was decided principally on clinical and pharmacological grounds, but pharmaceutical knowledge was a factor in deciding on the manner of presentation and the inclusion of materials in the preparation. The desire was to make a book which would reflect the latest achievements of medical science and clinical research while at the same time recognizing old preparations which were still in use and required control. Thus it came about that many products of the modern biochemical laboratory were included side by side with senna, castor oil, aloes, and the like. A large number of authorities had been consulted, including the Committee of Revision of the *U.S. Pharmacopoeia* and the expert committees of the Health Organization of the League of Nations. The ideal pharmacopoeia would give for every drug prescribed a complete set of standards, tests, and assays for its control. The progress made to this end was considerable, but it had not been possible to avoid some gaps. Scientific research went on continuously, but in preparing a periodical volume there came a time when it was necessary to close down for publication, so that in some respects the book was quickly out of date.

The crude vegetable drugs, Dr. Hampshire said, had been examined by an expert committee, and 11 of those previously appearing had been deleted on the ground of insufficient clinical importance. Cinchona was deleted as the result of a decision made by the Commission some years ago that this drug was to be regarded simply as the source of quinine, and that quinine was to be regarded simply as an antimalarial drug. Therefore certain tinctures, extracts, and so on of cinchona were removed, and some preparations of quinine had also been deleted. Drugs like linseed were dropped because better drugs were now available. Fresh infusions had been deleted owing to the fact that they were very seldom used, and plasters on the ground that it was no longer pharmaceutical practice to prepare plasters in a small way when much better preparations were produced on a manufacturing scale. The question of uniformity of size of tablets had been considered and an approach made to a definite standard for the purpose; but the information received made it evident that to introduce standards, with the necessary changing of dies and punches, would cause a great deal of inconvenience and expense at a time when this would not be justifiable.

The ointment of tannic acid had been included at a time when there was enthusiasm for unification with the *U.S. Pharmacopoeia*, but this and other ointments had now disappeared and been replaced by better preparations. During the war attempts were made to economize fats and paraffins by producing ointments containing a considerable proportion of water. Only the best of these had been retained. The range included had been decided by a committee of dermatologists and pharmacists as giving different types of bases which doctors could use for the addition of any drug they required. Boric acid ointment had been reduced in content to 1%. This ointment was simply retained in the *Pharmacopoeia* as a protective, and it was just as good without the boric acid as with it, but as it was a popular remedy it was thought desirable to retain the name and justify it by the inclusion of this minimal proportion. The sections on penicillin complied with the regulations under the Therapeutic Substances Act, and were simply put forward as being in accordance with the present state of knowledge. In connexion with penicillin it should be noted that the standards were brought into effect by notices in the *Gazette*; it was possible now to make changes very quickly by that method. Vitamins A, B, C, and D, and of vitamin-B complex the constituents aneurin hydrochloride, riboflavin, nicotinic acid, and nicotinamide, were all included.

The desire for unification in terminology and strength of composition had led to attempts from 1874 onwards to produce an international pharmacopoeia. An international conference at Brussels in 1925 reached agreement covering 77 potent drugs and preparations. Of these, 40 were not included in the 1948 *British Pharmacopoeia*, and of the 37 included, 25 complied with the requirements of the agreement and 12 differed in greater or less degree. The Health Organization of the League of Nations set up a technical commission in 1937 with a view to preparing a new international agreement, and an interim report was made. The war had delayed matters, but the formation of the World Health Organization offered an opportunity for the resumption of this work. An expert committee for the unification of pharmacopoeias met regularly at Geneva, and it

was hoped that a new international agreement would be forthcoming to meet the difficulties arising from different standards for drugs in different countries, which were especially troublesome and conceivably dangerous for travellers who had occasion to have a prescription dispensed in a country other than that in which it was issued.

SEX BEHAVIOUR OF THE MALE

DISCUSSION ON THE KINSEY REPORT

A report on the sex life of some 14,500 American men has lately been published in the United States. This report, by Dr. Alfred Kinsey, of the University of Indiana, is the first of eight volumes, and the second will be on the sex behaviour of the female. A meeting of the Planning Forum was held in London on Oct. 27, when this report was the theme for discussion. The subject was introduced by Dr. FRED GRUNDY, chairman of the British Social Hygiene Council, who said that the inquiry had shown the enormous range of variability of sex activity among men, and it was claimed by the author that both the very low and the very high activity were found among people who were well-adjusted and efficient citizens. On the whole the highest activity was found to be in late adolescence, and usually it dropped off slightly after the age of 30, though in many men it continued to an advanced age (85 was mentioned). Among Dr. Kinsey's findings were that there was no real evidence that sexual activity could be voluntarily diverted to art, literature, or other high-level activities; that sex activity tended to be higher in the subsequent life of males who attained puberty earlier than normal; that masturbation was more frequent among high school and "college-educated" men, while pre-marital intercourse was more often found among those of ordinary school education; and that men of the lower occupational and educational groups more often found extra-marital sexual outlets during early married life but returned to marital faithfulness later, whereas the reverse was true at college level.

Dr. Grundy said that Dr. Kinsey had employed the interview technique. The sample taken was not a completely random one; it was what was known as a judgment sample. As these interviews were with persons who had attended a talk by Kinsey and had been willing to subject themselves to his technique, there was a possibility that in his anxiety to get a completely representative sample Kinsey had over-weighted his selection with people who were at one or other extreme or were perverted in their sex activities, though the experts believed that such errors, if they existed, made no serious difference to the final results. Dr. Grundy thought that much the same pattern would be found in this country, though the incidence of homosexual practices would probably be rather less. Another question was whether Kinsey was justified in publishing results of this kind beyond a limited scientific circle, though he had not intended to make the report a "best seller." But in fact, said Dr. Grundy, Kinsey had brought a breath of realism into the subject of sex behaviour which perhaps was not so much needed over here as it was in the States.

Interview Technique

Dr. DAVID MACE, secretary of the Marriage Guidance Council, who had met Kinsey in New York and had subjected himself to his technique, said that the interview lasted fifty minutes, during which he was asked about 350 questions. Kinsey had an ingenious method of recording data, using a card hardly larger than a postcard, and setting out the history in code to an extent which if written in full would occupy twenty-five typewritten pages. He believed that Kinsey had done his best to get a complete cross-section of the population, and he and his three colleagues had spared no pains to ensure the integrity of the inquiry. The report was a picture of sexual behaviour in a sexually sick society, for the disturbed state of family life in America needed no emphasis. Normal sexual behaviour, which was the standard whereby these extremes and deviations had to be judged, was difficult to define, but it might be regarded as the way in which men and women behaved about sex in a society enjoying a sound, stable, and secure family life. One of the striking things elicited was the early development of sexual power in boys. It was disturbing to find that the average man had masturbated from his early 'teens at the rate of two or three times a week, and it seemed possible that while they had been teaching young people about the "facts of life" as illustrated in the animal kingdom their pupils were already engaged in sexual activity. He thought there was danger in the statement that pre-marital intercourse did not cause any trouble in subsequent marital adjustment. A small inquiry in Marriage Guidance Council cases had shown that there was a greater tendency for people who had had pre-marital intercourse to break away from the marriage when strains and stresses arose. No real answer could be given on this and other points until the investigation of female sex behaviour was completed, for women suffered more than men from irregular sex relations.

Dr. E. H. LARKIN said that none of his psychiatric colleagues who had taken sex case histories had expressed any surprise at the American figures. The report was not a psychological work; there was no attempt to equate the findings with the psychological state; but it contained many points of psychological interest, as, for example, that boys of 11, if they masturbated, although they had no emission, had an orgasm. The finding that the earlier sexual activity began the greater was its persistence was correlated with the well-known fact that in females in whom menstruation had begun unusually early the menopause was unusually late. One experience of the psychologist, hardly borne out by the Kinsey report, was that people who had most intense sexual pressure often lived most active professional or occupational lives. The subsequent discussion was noteworthy for the women speakers who attacked the Kinsey report for its non-idealistic outlook.

EMPIRE RHEUMATISM COUNCIL

NEED FOR RESEARCH

The annual general meeting of the Empire Rheumatism Council was held in the state rooms of St. James's Palace on Nov. 2. H.R.H. the Duke of Gloucester, who presided, said that the council was at all times happy to place its knowledge and experience at the disposal of all interested bodies and persons. In industry alone it was estimated that three million weeks of work were lost each year by the insured population as a result of rheumatic disease, and that the annual cost of rheumatism was in the neighbourhood of £20 million.

Lord Horder, who was re-elected chairman of the council, described the combating of rheumatism as "one of the major preoccupations of my life." He supposed he was too near to this particular crusade in medicine to say whether the Empire Rheumatism Council had justified its twelve years of existence. Its threefold purpose had been very carefully stated—namely, to organize research into the causes (not the cause) of rheumatic disease, to encourage education, both medical and lay, in the subject, and to stimulate public authorities to provide treatment for rheumatic sufferers at as early a stage of the disease as possible. Remembering as he did the very considerable advances that had been made during the existence of the council in all these three fields, he thought it not too much to say that the council's share in them had not been a minor one.

Dr. W. S. C. Copeman, honorary medical secretary of the council, gave a brief address on the need for research. Rheumatism, he said, was a word difficult to define. Professor Hench, of the Mayo Clinic, in his recent visit to this country had stated that there were over 200 forms of so-called rheumatism. Dr. Copeman himself evaded a definition by reciting three typical cases from his own records. One was a fatal case of juvenile rheumatoid arthritis in a child of 7. Next to nothing was known of the cause of these cases and little enough about their treatment. The second case was one of swollen and painful joints in a working woman, condemning her to hopeless bedridden crippledom—a condition which might have been relieved and possibly cured if it had been tackled in time. The third example was of spondylitis in a young naval officer. Dr. Copeman said a few words about other serious forms of rheumatism—sciatica, neuritis, osteoarthritis—all major enemies of industrial life owing to the toll they took of health and working time. Rheumatic fever came into

different category, attacking the heart muscle of its victims and being responsible for a very large proportion of heart disease in this country.

Finally he made a plea that funds should be provided for specially trained workers and for laboratory and other equipment to assist research. If the council, he said, in addition to its present all too modest funds, could be assured of half the money which was justifiably spent on cancer and tuberculosis the answer to the question of rheumatism could be found. The Government gave sympathy but no financial support, and therefore he appealed for voluntary help, especially from industrialists and organized labour He was sure that the result would yield dividends exceeding the most sanguine expectations.

Reports of Societies

CANCER OF THE CERVIX

EARLY AND PRECURSORY STAGES

At a meeting of the North of England Obstetrical and Gynaecological Society held in Manchester on Oct. 8, with the president, Mr. J. E. Stacey, in the chair, Professor EMIL NOVAK, of Baltimore, U.S.A., gave an address on "Early and Precursory Stages of Cervical Cancer."

Professor Novak pointed out that in the U.S.A. 18,000 women died from cancer of the uterus last year. The chief hope of reducing the death rate lay in the early diagnosis of established disease and the detection of precursory lesions. Although there were no dramatic advances to report, certain generalizations could be made. It was agreed that a cancer cell was a cell which had "gone wrong" and assumed a different and uncontrolled form of life. In this change heredity was an important factor, and this was borne out by animal breeding experiments and by human studies. It appeared that there were three classes of individuals: (1) those whose inherent predisposition was so strong that they were destined to suffer cancer irrespective of any other circumstances; (2) those in whom the predisposition was less well developed and who required exciting factors before the growth appeared (there might be many exciting factors, but so far as the uterus was concerned the possibilities were injury, infection, and oestrogenic hormones); (3) those who had no predisposition to the disease, and who would never develop cancer even when exposed to those activating factors which determined the onset of the disease in class (2).

The relationship of oestrogens and carcinoma was a difficult one to assess. Judging by the well-known effects of these hormones it was reasonable to suppose that they might cause cancer in susceptible women, but this effect could only operate in respect of the breast, uterus, vagina, and vulva. Reviewing experimental work on the production of breast cancer by means of oestrogens, Professor Novak pointed out that this disease had only been produced in mice, and the results had been negative in all other species. Cervical changes in animals following the administration of oestrogens were also reported, and it was of interest that these could be prevented by giving progesterone. Progesterone would appear to have some protective action against the carcinogenetic effect of oestrogen. Although a study of biological hormonal effects and of the pathology of uterine carcinoma might make one hesitate to employ oestrogen therapy in the presence of a precancerous lesion or in a woman with a strong family taint of malignant disease, yet Professor Novak did not know of a single case in which oestrogens had been shown to have been the cause of cancer in women.

Precancerous Lesions

Professor Novak went on to discuss some pathological features, with particular reference to precancerous lesions. Leukoplakia of the cervix, a condition first recognized and described as a result of colposcopic studies by Hinselmann, was now generally accepted as not predisposing to malignant change. The most important lesion was intra-epidermal carcinoma, or Bowen's disease. In this the cells of the epidermis took on malignant characters, but the condition might remain localized for many years before ultimately breaking through the basement membrane to assume typical malignancy. Professor Novak said that in his experience, when this condition affected one part of the cervix, then it was common to find fully established carcinoma in another part, provided a thorough search was made. Nevertheless, routine and careful examination should make it possible to detect and treat this condition while it was still localized. Amputation of the cervix was probably sufficient to deal with it adequately, although in his clinic total hysterectomy was usually carried out—partly for the purpose of having all the material for study and research. Another change in the cervix which might be significant was unusual activity of the basal cells of the epidermis. This might be a reaction to a hormonal stimulus. Such a change and even pseudo-malignant features were to be seen in the cervix sometimes during pregnancy. These changes were reversible and might well be associated with the profound hormonal changes of pregnancy.

Discussing the early diagnosis of malignant and pre-malignant states, Professor Novak referred to the newer techniques. The Schiller test with iodine had little application, since it indicated merely the site of pathological change and not its nature. Vaginal smears were in vogue but were extremely difficult to interpret; even the few experts admitted a comparatively high proportion of errors in diagnosis. He considered that cervical biopsy still remained one of the most reliable methods but advocated a modification, namely "surface biopsy," in which large areas of the superficial layers of the epithelium were removed by scraping with a curette or sharp spoon. This technique was most satisfactory for revealing intra-epidermal carcinoma. Finally Professor Novak referred to the difficulty of making a diagnosis of carcinoma on histological grounds. This applied to endometrial as well as cervical studies. There were many borderline cases. He illustrated these and other points by photomicrographs of cervical and endometrial tissue.

The president and Sir William Fletcher Shaw, speaking on behalf of the Society, both thanked Professor Novak for his interesting and instructive address, and Professor Novak replied.

TREATMENT OF THYROTOXICOSIS

LIVERPOOL MEDICAL INSTITUTION

At a meeting of the Liverpool Medical Institution on Oct. 21, with Dr. H. H. MACWILLIAM, vice-president, in the chair, a discussion took place on thyrotoxicosis.

Mr. PHILIP HAWE said that five years had elapsed since the introduction of the thiouracil compounds and still there was no unanimity of opinion about their value. To provide a standard against which the results of thiouracil therapy could be judged the records of two series of cases operated on by the speaker at the David Lewis Northern Hospital, Liverpool, were analysed: (*a*) a post-war series of 86 cases (1945–8), and (*b*) a pre-war series of 78 cases (1936–9). Carcinoma was found on pathological examination in three cases. The average hospital mortality rate was thought to be substantially above 0.5% (this did not refer to patients prepared for operation with thiouracil). There were three deaths among the 164 cases analysed; all were poor-risk patients with long-standing nodular goitre.

The efficiency of the operation was illustrated on the basis of a recent "follow-up." In both series the results were highly satisfactory—almost 90% of the patients were capable of normal duties six months after operation, and, allowing for advancing years, there was evidence to show that these results were maintained for at least nine to twelve years. Exophthalmos was slow to improve in the post-war group, but in the pre-war series the eyes had with few exceptions greatly improved or returned to normal. Of the 18 cases with fibrillation 15 returned to a normal rhythm after operation and remained normal over long periods. A group of 6 pre-war adolescent patients was found to be very well indeed, with the exception of one who suffered from mild hypothyroidism. Of 78 pre-war cases 8 developed hypothyroidism—4 severe and 4 mild—and recurrence occurred in 3 cases. The early results of thiouracil were thought to compare favourably with those of surgery, but would these good results be maintained through the years as they were after operation?

Dr. LESLIE CUNNINGHAM pointed out that the discovery of the effect of thiouracil introduced a new principle in practical therapeutics. For the first time it appeared possible to control

disease by preventing with drugs the formation of a hormone. Results of thiouracil therapy were discussed, and the favourable cases included one of auricular flutter which responded to thiouracil alone in three weeks. Contraindications appeared to be the previous occurrence of agranulocytosis, intrathoracic goitre and cases in which there was evidence of pressure phenomena, hyperophthalmopathic Graves's disease, suspected malignant disease, and cases of thyrotoxicosis in which the temperament and economic circumstances contraindicated a prolonged and tedious treatment. The treatment of post-operative auricular fibrillation by means of quinidine was described. Out of 9 cases 8 responded very rapidly; 2 responded after thiouracil had been given as well, and without operation.

Professor CHARLES WELLS thought there was a tendency to minimize the risks of thyroidectomy and that extremely low mortality figures could be obtained only by rejecting a number of bad-risk cases. Up to a couple of years ago he had had a long series of cases with almost no mortality, but in the last two years he had had a few unexpected shocks. Two cases in the treatment of which he was concerned were examples of gross nodular goitre in elderly women without recognizable toxic manifestations. In each case a severe post-operative crisis developed.

Thyroidectomy or Thiouracil

Professor HENRY COHEN recalled that in the symposium on thyrotoxicosis ten years ago which he had the privilege of opening there had been general agreement that thyroidectomy was the treatment of choice, but it was recognized that the operation was based on the primitive and barbaric principle of cutting off the offending part, and the hope was expressed that with the unmasking of causative factors non-surgical methods of treatment would be discovered. We still remained ignorant of essential factors in the causation of thyrotoxicosis. The clinical picture of the victims of thyroid addiction showed that thyrotoxicosis and hyperthyroidism were not synonymous, though the former included the latter. Moreover, the various patterns of thyrotoxicosis suggested that it might be the expression of more than one aetiological factor and that the susceptibility of different tissues to thyroxine, and their capacity to use it, might well modify the clinical picture. Thiouracil and radioactive iodine were most valuable both in treatment and in pre-operative care, but they did not attack extra-thyroid causative factors. Thiouracil had its toxic hazards and might produce, from swelling of the goitre, mechanical disabilities demanding urgent surgical intervention. Moreover, there was always a risk of overlooking the malignant thyroid with thyrotoxicosis if medical treatment alone were advised. But there was a real place for thiouracil in the therapy of thyrotoxicosis, and Professor Cohen subscribed to the indications laid down by Dr. Cunningham, and mentioned the benefit which had followed the exhibition of oestrin in large doses in a few severe cases of exophthalmic ophthalmoplegia.

Mr. A. M. ABRAHAMS said that the symptom of exophthalmos was caused by (*a*) lid retraction and (*b*) true exophthalmos. It was usually the former that improved. One case in 250 had increased exophthalmos after operation; excision of the retrobulbar fat improved the condition. Auricular fibrillation had occurred in 19 cases of the series of 250 he had reviewed (8%). This ceased in 6 cases within three weeks of operation and still persisted only in 3 cases. The results of operation were: excellent in 187 (77%); good in 46 (19%).

At a meeting of the Devon and Exeter Medico-Chirurgical Society on Oct. 26 Dr. Horace Evans concluded a review of hypertensive disease with special reference to its surgical treatment by saying that as a rule operation should not be undertaken on patients over 50. Certain unpleasant sequelae must be anticipated, the most important of which was sterility in young male subjects. In a series of about 100 cases treated surgically it was fair to say that in most of them the operation had been worth while, though only a few had shown dramatic improvement. Sympathectomy apparently cured retinitis and it undoubtedly relieved symptoms, especially headache. Very few men were still alive four years after operation, but this was a considerably longer prognosis than that to be expected without operation. Operation also provided a possible alternative to the termination of pregnancy in hypertensive expectant mothers.

Preparations and Appliances

WALKING-APPLIANCE FOR LOWER LIMBS IN PLASTER

Dr. A. R. THOMPSON, Medical Officer of Vauxhall Motors, and Mr. L. W. PLEWES, Surgeon to the Orthopaedic Clinic, Luton and Dunstable Hospital, write: The ideal walking-appliance for patients with a leg in plaster has not yet been found, although improvements are constantly being developed. This problem was put to the rehabilitation unit at Vauxhall Motors, Luton, several years ago, and under the guidance of the engineer-director, Mr. Newell, and his assistant, Mr. Trussell, a boot has been designed and used successfully for the past eighteen months in 70 cases.

Using scrap leather, 1-in. (2.5-cm.) "sorbo," and elmwood soles, these boots are made by the patients themselves in the Centre. Their weight varies from 1¼ to 2 lb. (0.68–0.9 kg.), according to size. The accompanying illustrations show the design in some detail.

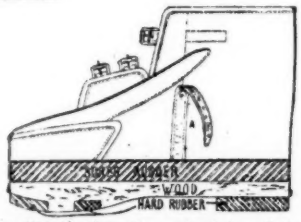

FIG. 1.—Diagram illustrating the principle of the boot. The strap A is incorporated inside the boot to secure the plaster cast firmly within.

FIG. 2.—(A) The elmwood sole has been fitted with three bars of hard rubber. (B) One-inch sorbo has been fixed on to the top of the wooden sole. (C) Scrap leather has been used to cover the sorbo.

FIG. 3.—The finished boot, showing three strong straps to keep it in place.

One of the distinct advantages of this appliance is the relative normality of gait which is possible. Not only is the natural heel-and-toe action permitted, but the sorbo gives a springiness to the gait which is so apparently missing in the usual rocker arrangement. Other advantages are the smart appearance and the removability of the boot, which saves bed-linen.

One difficulty which was soon overcome was the slight alteration in skin-tight plaster technique necessary when the boot is to be used. The sole of the plaster cast should be as nearly flat as possible, and reinforcement of the cast at the ankle and just above the ankle was necessary. Another problem was the discomfort along the front of the leg, as the weight is borne by the front of the foot. A felt pad 2 in. (5 cm.) wide placed along the subcutaneous border of the tibia proved satisfactory.

We wish to pay tribute to the Vauxhall Rehabilitation Unit for the interest, care, and ingenuity shown in the development of this successful walking-appliance.

Correspondence

New South Wales Branch of B.M.A. and R.M.B.F.

Sir,—In your issue of Jan. 3 (p. 28) you published a letter from me informing the profession that the members of the New South Wales Branch of the British Medical Association were sending food gift parcels to beneficiaries of the Royal Medical Benevolent Fund.

I would like to make further public acknowledgment of their generous action and to report that up to date our beneficiaries have received four or five gift parcels addressed directly to each of them. This makes the wonderful total of over 2,500 parcels altogether. Your readers can imagine how grateful the recipients feel and how deeply touched they are by the kind thought of professional colleagues so many thousands of miles away. I have written to the members of the New South Wales Branch telling them that their action makes them very near and dear to us.—I am, etc.,

Webb-Johnson,
President,
Royal Medical Benevolent Fund.

Tudor Edwards Memorial

Sir,—In the *Journal* of June 7, 1947 (p. 821), you were good enough to publish a letter inviting contributions to a fund for the establishment of a memorial to the late Mr. Arthur Tudor Edwards, M.Ch., F.R.C.S.

The fund was closed on March 31 last and reached £4,000, with which the Royal College of Surgeons of England and the Royal College of Physicians have consented to form and administer a trust to found a Tudor Edwards Lectureship to be given alternately at the two Colleges.

It is hoped that the lectures will reflect Tudor Edwards's wide interest, and that they will embrace not only the surgery and medicine of diseases of the chest but also the allied studies of anatomy, physiology, pathology, and anaesthetics applicable to thoracic surgery.—We are, etc.,

Horder (*chairman*),
Courtauld-Thomson (*treasurer*).

London, W.1.

Femoral Hernia

Sir,—I feel I must reply to the remarks in your annotation on femoral hernia (Oct. 23, p. 750) regarding the use of the low approach in cases of strangulation, and I must disagree with the statements that "it is very hard to justify a low approach in cases of strangulated femoral herniae" and that "the low approach may give a totally inadequate view of the strangulated viscus."

All are agreed that the contents of the sac must in every case be carefully examined and the viability of the bowel ascertained before returning it to the abdominal cavity, but this I contend can adequately be carried out from the low approach. The sac having been defined and opened, the cause of the strangulation, either the lacunar ligament or the narrowness of the neck of the sac itself (the latter being the more frequent in my experience), is freed and the loop of imprisoned bowel delivered into the wound—as much as is necessary can readily be brought outside and the constriction rings especially examined for viability. If viable, the bowel is returned and the repair continued in the usual way. Should resection be decided upon (this is a comparatively rare occurrence; the vast majority of cases do not require anything further than relief of the constricting agent—in the series reviewed under 5% required resection), then in my opinion this can be more readily and more safely performed through a separate paramedian incision.

It has been my experience that even in a Richter's hernia there is little danger of the bowel slipping back through the femoral ring before it has been brought into full view and its viability ascertained, and even though this should occur (I repeat, a rarity) it is quite a simple matter to open the abdomen and thus be enabled fully to inspect this loop of bowel.

I have used the low operation for strangulated femoral herniae over a large series of cases and with very few resulting complications. In the majority of strangulations the operation has proved to be a simple and straightforward procedure and is especially suitable for frail and aged subjects—local analgesia being all that is required. It is worth noting in this connexion that the average age for a strangulated femoral hernia is between 63 and 64.

Obviously no operation is without its own particular drawbacks, but surely it is wise to select the one which is the simplest and the most straightforward, and at the same time the one which gives the most gratifying end-results. (In a careful follow-up there was no increased rate of recurrence in the strangulated as compared with the non-strangulated cases.) This is the claim I put forward for the low operation. It would indeed be most interesting and enlightening to hear other surgeons' views on this point.—I am, etc.,

Bedford — Andrew G. Butters.

Sir,—As one who has practised the "low" repair for femoral herniae for some years to the total exclusion of all other methods I welcome Mr. Andrew G. Butters' article (Oct. 23, p. 743) and find myself in agreement with most of what he says. That the cleansing and freeing of the neck of the sac, so as to allow good retraction following transfixion and removal of the sac, is the most important step cannot be too strongly emphasized. I am opposed to the "high" operation in view of the unnecessary damage inflicted on the inguinal canal.

I do, however, disagree with him and with the annotation on this subject in the same issue (p. 750) that the abdomen should be opened through a separate incision should resection of bowel be necessary in strangulated femoral herniae. I have always carried this out through the "low" approach and have found this safe, adequate for visualization of the afferent and efferent limbs of the affected bowel, and readily accomplished under local anaesthesia.

Peritonitis from incompletely inspected strangulated Richter's hernia, which the annotator describes and which he uses to condemn the approach, should surely reflect on the inspector rather than the operation used.—I am, etc.,

Isleworth, Middlesex. — J. Scholefield.

First Conference of Industrial Medical Officers

Sir,—The preoccupations of the Ninth International Congress on Industrial Medicine prevented my reading Sir George Schuster's paper in the *Journal* of Sept. 11 (p. 505) until recently. In paragraph 29 Sir George refers to the first conference of industrial medical officers in 1921 as having been convened by the late Sir Thomas Legge. In the interests of historical accuracy may I point out that that conference was convened by the Industrial Welfare Society and was opened by H.R.H. the Duke of York, now H.M. the King?

It is right to say that the late Sir Thomas Legge together with Sir Thomas Oliver and others were sources of great encouragement and support to that conference, and indeed it was Sir Thomas Legge who suggested the holding of such a conference to Mr. Robert Hyde, the director of the Society.—I am, etc.,

London, W.2. — T. E. A. Stowell.

Pensions for Diabetics

Sir,—I should like to air my opinion about the hundreds of claims for pensions by Servicemen who have developed diabetes while in the Forces, particularly as more than a hundred have been referred for my opinion as to whether Service hardships, shocks, or wounds are aetiological factors. This problem is no new one, as diabetes discovered after accidents in civil life is a common source of litigation. In such cases there has seldom been a urine test for long before the accident to prove that diabetes was not present before that accident. But Service cases are different.

Diabetes in recruits is normally excluded by a urine test, and so, if and when they develop diabetes in the Forces, they conclude that their service has caused it and that they should be pensioned. Some have gone through wounds and hardships; others have never left this shore, but too many of these cases find something—a knock, a cold winter, bad food—to which they ascribe their diabetes.

The scientific and considered medical opinion in every country finds no evidence that trauma, shock, physical or mental strain, exposure, or climatic conditions are causal factors in the aetiologically mysterious disease diabetes, though factors of heredity and previous obesity are well recognized. This opinion grows stronger with more experience. Both major wars produced no increase in diabetes, and London with its tensions and "blitzes" shows no increased incidence. A phrase in my book, *The Diabetic Life*, "When shares go down in Wall Street diabetes goes up" (p. 10), partially contradicts this. I must confess that this sentence was copied from another writer into my first edition in 1925 when I knew little and has remained there too long. I shall expunge this phrase from future editions. Factors of worry can sometimes increase the sugar in established diabetics but, I think, never *per se* are a clear primary cause, otherwise the majority of humanity would become diabetic. So let me repeat that I think war claims for pensions for diabetics are unfounded on fact.

The expense to the State of tribunal appeals and High Court litigations must be considerable, probably thousands of pounds to the taxpayer. I should mention that many times the British Legion too presses for compensation in such cases and approaches me for supporting certificates. These I cannot provide on factual grounds, as I consider that diabetes must be looked upon aetiologically in the same light as cancer or leukaemia.

And, after all, is diabetes a disability requiring or worthy of a pension, award, or support? The Council of the Diabetic Association, a sympathetic body of lay diabetics, has often considered appeals to support claims for pensions and has refused—this on the ground that adequate treatment and co-operation in it by the diabetic produce normal health and no real important disability in work or life.—I am, etc.,

London, W.1. R. D. LAWRENCE.

Forequarter Amputation

SIR,—If it is not too late I should like to refer to Dr. J. D. C. Millar's interesting memorandum (Sept. 18, p. 559), which I overlooked. There is in fact a good deal of literature on the subject of forequarter amputation, particularly a comprehensive monograph by Paul Berger,[1] the French surgeon whose name has for so long been associated with the classical operation. In Berger's book are to be found the histories of many cases of traumatic amputation as well as amputation for pathological conditions. It would seem that most of the cases have been recorded by British surgeons, one of the first mentioned being Cheselden's case, to which Mr. J. Dudfield Rose (Oct. 16, p. 722) draws attention. A case in recent times similar to Dr. Millar's is that recorded by Drake Lee and Frank Radcliffe.[2] It is worthy of note that in the majority of these cases there is little haemorrhage but much shock, and that while the scapula comes away with the arm the clavicle remains attached to the body. The case of avulsion of the hindquarter recorded by Dr. Protheroe Smith (Oct. 2, p. 662) is indeed a remarkable one, perhaps the first on record.

According to Berger there has always been great controversy as to who was the first to perform forequarter amputation. Claims were advanced on behalf of Cheselden because of the case mentioned above and on behalf of Baron Larrey, Napoleon's famous surgeon, who accompanied the Emperor's armies on five different campaigns. Eventually credit was given to Ralph Cumming, a surgeon-captain in the Royal Navy, who performed the operation on a young sailor, aged 21, at Antigua in 1808. Cumming did not publish his case, but a letter from A. Copland Hutchinson with reference to it was published in the *London Medical Gazette*, November, 1829. The letter was treated with scant respect by a Scots reviewer, who wrote a blistering comment on the data supplied.

I was interested in the subject some years ago, and reference to the naval records showed that there was no doubt whatever that Cumming performed the operation, but the only note he made at the time was "amputation of the shoulder"—a brevity in keeping with the silent Service. The operation took place in March, 1808, and the sailor arrived back in England in the autumn of that year and reported to the Naval Hospital at Greenwich. It was found that complete forequarter amputation had been done—arm, scapula, and clavicle, all had gone. It would appear also from the records that the surgeon-captain drew the highest pay of any officer on the station. *O tempora, O mores!*

The Berger or classical operation continues to be described in detail in surgical textbooks, but it is open to question if it is the best operation. To say the least of it, it is not an easy one to perform. The essential feature of the method is control of the main vessels at the outset. The middle third of the clavicle is resected to allow of exposure of the subclavian artery, here situated behind the vein; the artery is divided between ligatures, the arm elevated to empty it of blood, and the vein is then likewise secured. While this procedure may be an interesting anatomical exercise on the cadaver, it may prove a difficult if not a dangerous step in the living, particularly when one is dealing with a large tumour and engorged veins. All this is done with the object of conserving an armful of blood, a questionable procedure now that blood transfusion is a commonplace of surgery. Besides, it is more than doubtful if ligature of the subclavian artery at this site fulfils its object, for it certainly does not control the arterial anastomosis around the scapula.

In fact, it will be found much easier and quicker to perform the operation from behind, following the method carried out originally by McGill,[3] of Leeds, and later given in detail in the *British Medical Journal* by Littlewood,[4] another Leeds surgeon. It will be found too that there is not any more loss of blood than in the Berger method. If for any reason the posterior method is not advisable, then a modified anterior approach can be used by first dividing the pectoral muscles and getting control of the axillary vessels as high as required. This exposure also gives access to the subscapular artery, which plays a large part in collateral circulation. The clavicle can then be divided and the vessels controlled higher up if necessary. —I am, etc.,

London, W.1. MICHAEL SMYTH.

REFERENCES

1 *Amputation Interscapulo-Thoracique*, 1887, Paris.
2 *Brit. J. Surg.*, 1940, **27**, 599.
3 *British Medical Journal*, 1880, **21**, 702.
4 Ibid., 1922, **1**, 381.

H 11 in Malignant Disease

SIR,—As a general practitioner who has used H 11 to a limited extent but with encouraging results I was interested to read the report from the Medical Research Council (Oct. 16, p. 701) and the leading article on this subject (p. 716). I must admit, however, that I was not impressed with the completeness of the investigation, and I do not therefore feel that the conclusions reached are justifiable.

The committee states, "To attempt to follow up the subsequent life histories of the patients by inquiry of general practitioners . . . would involve an amount of time and labour incommensurate with the results likely to be achieved." I would respectfully suggest that this is the only satisfactory method of reaching a conclusion on the efficacy of H 11 in the treatment of human cancer. In your leading article is the amazing statement, "Few general practitioners will see more than three or four cases of cancer a year." As a partner in a busy industrial practice a conservative estimate of the number of cases seen by me in a year would be fifteen to twenty.

I have personally used H 11 in the treatment of three cases to date. One patient, a woman with carcinoma of the ovary with massive peritoneal and pelvic secondaries, died of intestinal obstruction within three months, but I feel her case was quite hopeless from the start, and H 11 was employed as a last resort. The other two cases are alive and comparatively fit. One, a case of bronchial carcinoma confirmed by bronchoscopic biopsy, shows clinical and possibly radiological improvement, but he has only been under treatment for five months and requires more prolonged observation to assess the results of treatment.

The remaining case is that of a man of 42 with carcinoma of the rectum who has been under continuous treatment with H 11 since March, 1947. His case is of great interest, and I hope to publish full details at a later date. We had a laparotomy in March, 1946, when the diagnosis was confirmed by biopsy, but owing to two palpable nodules in the liver, thought to be due to secondaries, only a colostomy was performed. Treatment started with H 11 in March, 1947, and his clinical condition improved to such an extent that a further laparotomy was performed in January, 1948, when, as no

secondaries in the liver or elsewhere could be detected, an abdomino-perineal excision was performed. This patient has recently returned to work in good health. He is continuing with H 11 therapy.

Nobody suggests that H 11 should be used as a substitute for surgery or radiotherapy, but the general practitioner is called upon to look after most cases of malignant disease abandoned as hopeless by the consultants. I would therefore make a plea for a thorough investigation of the effects of H 11 therapy on their patients by general practitioners. I consider that failure of the Medical Research Council to enlist the assistance of general practitioners largely vitiates the value of their conclusions. My own results, although not conclusive, are encouraging enough in my opinion for me to continue to employ this agent in the hope at least of relieving pain and distress and possibly of prolonging life. If this hope is not fulfilled in the future I can assure you I shall abandon this therapy as I have many others in the realm of medicine. At the moment, however, I consider the treatment *sub judice*.—I am, etc.,

Birmingham. H. Josephs.

Sir,—To those observers who have recorded a conspicuous success with the use of this agent the uncompromising report of the Medical Research Council's committee (Oct. 16, p. 701) will come as a great disappointment. Surely an agent that has cured a few hopeless cases calls for a more systematic clinical trial at a research centre rather than so curt a dismissal?

It seems to me right that all cases of cancer, confirmed by biopsy, that have been successfully treated by H 11 should be reported in the medical press immediately. The astonishing case of carcinoma of the bladder which I reported in the *Journal* of Aug. 14, 1943 (p. 211), has remained in the full enjoyment of health and has again undertaken work of serious responsibility. His survival since the commencement of H 11 treatment is now 6¼ years. There is no doubt whatever that he owes his life to changes in his state which started a few days after H 11 was first used and continued progressively. I have used the treatment in five subsequent cases where the diagnosis has been confirmed by biopsy. In one breast cancer the progress of the disease was arrested, death taking place later from cerebral haemorrhage. In another similar case progress is retarded.—I am, etc.,

Fairwarp, Sussex. Frederick Curtis.

Classical Caesarean Section

Sir,—With regard to the correspondence in your columns about caesarean section, although my experience of the operation is probably not so extensive as your other contributors I feel that in the classical operation a great deal depends on careful sewing up. I learned my technique from the late Mr. Louis C. Rivett, whom I admired as a very gracious man and a most expert operator. He used good thick silk for at least one layer of mattress sutures, and he was most careful to approximate the whole thickness of the uterine wall.

The tendency is still very often to exhibit speed in this operation, and in the presence of the usual free bleeding in the wound, and with the fear of the suture going right into the uterine cavity, it is easy to fail to get down to the uterine endometrial layer exactly. The wound can be quite "successfully" closed at the time, and yet considerable gaps might easily thus be left in the thickness of the uterine wall. Following the Bonney–Rivett technique, of course, several layers are introduced, leaving, as everyone knows, a large ridge of uterine tissue. I should have thought that, barring accidents, such careful sewing up would leave a very sound uterus, as indeed, I should almost venture to say, does happen in a very large percentage of cases.

The use of spinal anaesthesia for the operation encourages one to operate leisurely and also, I think, reduces haemorrhage quite considerably. The use of ether, if anyone uses it to-day, will of course, as in other operations where free bleeding is likely, increase that bleeding. Perhaps what I have said is obvious to all experienced operators, but I think that it may be useful to draw attention to these points.—I am, etc.,

Chigwell, Essex. N. Beattie.

Hereditary Haemorrhagic Telangiectasia

Sir,—I read with interest Dr. C. P. Petch's account (Oct. 30, p. 785) of a case of hereditary haemorrhagic telangiectasia. Although uncommon, I have in my own experience encountered six cases during the past four years, and in my opinion the incidence of the disease is greater than might be expected from the number of published reports. The anaemia in the case described was the result of repeated epistaxis, the usual source of bleeding in such cases; attention is thus focused on the site in which the telangiectases are most frequently situated, and their presence is unlikely to be overlooked.

Nose bleeding is, however, sometimes absent throughout, as occurred in a recent case which came under my care. The patient had been treated for anaemia for ten years and complained intermittently of periods of extreme fatigue, palpitation, and dyspnoea. Investigation at a general hospital had shown no abnormality. Regular blood counts had been carried out during the six months before she was referred to my out-patients. The first gave the picture of a megalocytic anaemia: anisocytosis, poikilocytosis, and numerous normoblasts were present. Treatment with liver had resulted in a maximum reticulocyte response of only 1.7%.

The diagnosis was based on the association of telangiectasia on the lips and tongue with a sudden drop in the blood count from R.B.C. 4,470,000, Hb 70%, to R.B.C. 2,790,000, Hb 44%, in one week. This change was unassociated with overt blood loss or evidence of haemolysis. The stools gave a consistently strongly positive benzidine reaction, which was unaltered after treatment for 10 days with rutin, 80 mg. t.d.s. The ineffectiveness of this preparation in controlling bleeding accords with Dr. Petch's experience.

An increased awareness of the disease and a careful scrutiny of the lips and mouth in every case of anaemia in which the cause is not clearly apparent may well bring many new cases to light and permit of rational instead of haphazard treatment.—I am, etc.,

Guildford. Heward Bell.

Therapeutic Abortion

Sir,—May I refer to the report which you gave recently of a medical trial which had caused considerable interest—that of Drs. Eleanor Bergman and Mary Bell Ferguson, who were acquitted at the Old Bailey in May, 1948, of a charge of criminal abortion (May 22, p. 1008).

Both the public and medical accounts of this case failed to report that Mr. Justice Morris has given real assistance to the medical profession by enlarging upon the principles established in the Bourne case and by generally clarifying the practitioner's position in relation to the practice of therapeutic abortion. During the long and careful summing-up of this case the judge quoted the following words from the Bourne case:

"If the doctor is of opinion, on reasonable grounds and with adequate knowledge, that the probable consequence of the continuance of the pregnancy will be to make the woman a physical or mental wreck, the jury are quite entitled to take the view that the doctor who, under those circumstances and in that honest belief, operates is operating for the purpose of preserving the life of the mother. . . ." He added, "I fully adopt those words and invite you to bear them very much in mind."

Moreover, he told the jury, "You are not concerned with the question as to whether Dr. Ferguson arrived at the right conclusion; you have not to decide whether Dr. Ferguson did or did not make a mistake. Between medical people there may often be differences of opinion; sometimes it is difficult to assert which of two opinions is to be preferred, but you are not here to weigh up whether Dr. Ferguson was correct or incorrect in the view that she had formed. You have to be satisfied by the prosecution that she expressed a dishonest opinion, and that when she advised, if you think she did advise, the termination of pregnancy by her letters in these two cases, you will have to consider whether you are persuaded by the evidence called by the prosecution that that lady gave a dishonest opinion, did not act in good faith, and was therefore advising something that was unlawful."

The medical position in the future is, therefore, greatly clarified. Provided that the practitioner who recommends the termination of pregnancy can satisfy a jury that his opinion was given "in good faith" he will not be expected to produce

irrefutable proof of the validity of his medical opinion—a point occasionally so difficult that practitioners have been known to hesitate to give consent in cases where their clinical judgment would have favoured termination.

These matters are clearly of importance to the medical profession, and we trust you will make them available to your readers. The Abortion Law Reform Association possesses a few copies of the summing-up of Mr. Justice Morris which could be borrowed by interested readers.—I am, etc.,

ALICE JENKINS,
Hon. Secretary,
53, Gloucester Terrace, London, W.2. Abortion Law Reform Association.

Neonatal Asphyxia

SIR,—Dr. W. N. Leak (Oct. 30, p. 797) refers to the work of the late Sir Joseph Barcroft and his associates on the foetal circulation, and especially their discovery that in the case of the sheep it is the nasal area which receives the first stimulus at birth and thus initiates inspiration. In the lower mammalia the sensory area of the nose often extends over the alae and is not, as in man, chiefly confined to the inside of the nostrils. I do not know whether the stimulation of the nose of the newborn lamb is tactile, thermal, or olfactory (that is to say to the sensation of smell), but the nose of man is certainly a poor receptive organ compared with the nose of the lower mammalia.

It has long been the practice of obstetricians to use carbon dioxide as a means of resuscitating asphyxiated infants, but it seems to me to be idle to suppose that any of this gas can be absorbed through the nose to reach the respiratory centre, and it cannot be expected to reach the circulation through the unexpanded lungs. Nevertheless, it is the experience of many of us that carbon dioxide is beneficial, and I suggest that its action is purely a local one of sensory stimulation. The tickling sensation experienced in the nostrils when we essay to drink an effervescent liquid is not due solely to the bursting of the bubbles of liquid containing gas but to the gas itself, and the same sensation is produced by blowing a current of dry carbon dioxide on to the nasal mucous membrane from a sparklet apparatus. Like Dr. Leak, I am astonished that this physiological principle has been so far omitted from obstetrical textbooks.—I am, etc.,

Wivenhoe, Essex. W. RADCLIFFE.

SIR,—Dr. W. N. Leak (Oct. 30, p. 797) is to be congratulated upon the admirable way he reminds us of the late Sir Joseph Barcroft's brilliant researches into the physiology of neonatal respiration. It is unfortunate that there is still so little liaison between physiologists and clinicians, not only for their own sakes but because patients are often unable to benefit from the results of physiological research until many years after these have become common knowledge among non-clinicians. In this respect I agree that it is astounding how many authorities are ignorant of, or prejudiced against, a physiologically rational treatment of neonatal asphyxia such as that mentioned by Dr. Leak.

The most frequent criticism is that cerebral stimulants will encourage the respiratory centre to metabolize the last remaining molecules of oxygen available, with still further depression of the centre, and that should these stimulants prove ineffective other methods will fail owing to the anoxic condition of the centre. Presumably this is what is meant by the "sadistic attacks" quoted by Dr. Leak as occurring in a pre-publication copy of a new textbook. The answer is of course that injections of cerebral and respiratory stimulants ("cardiazol"-ephedrine, alpha-lobeline, nikethamide) into the circulation via the umbilical vein or the heart itself in desperate cases so rarely fails to initiate respiration that the above criticism rarely applies—in any case, should the baby fail to take a breath on its own the last few molecules of oxygen will be used up anyway and to no effect.

Dr. Leak suggests that the "basic pattern of respiratory response to sensory stimuli"—i.e., ecteroceptor impulses from the skin, proprioceptor impulses from muscles, and enteroceptor impulses from internal structures—may persist long after birth and into adulthood. With regard to the skin painful stimuli and sudden douching with cold water are known as respiratory stimulants even to laymen. It is not generally recognized, however, what a large part proprioceptor impulses may have in reflexly affecting respiration. Physiologists now regard these impulses as responsible for the greater proportion of the hyperpnoea of exercise,[1] and Dr. Carl F. Schmidt,[2] professor of pharmacology of the University of Pennsylvania, goes so far as to suggest that the very existence of muscle tone itself is sufficient to maintain a continual reflex bombardment of the respiratory centre which combines with carbon dioxide and other reflex stimulation in maintaining the "tone" of the respiratory centre. It has been proved experimentally that even passive movements of muscles (whose blood supply is isolated from that of the parent body) will stimulate respiration, which makes one feel that Sylvester's method of artificial respiration in adults may be the most rational of those available. In addition, one wonders whether keeping newborn babies still prior to the initial respiratory effort is quite as reasonable as was hitherto supposed.

Anaesthetists may be interested to note that Dr. Schmidt's theory may have some bearing upon the respiratory depression which accompanies high spinal analgesia. In some cases this depression commences before any of the intercostal muscles are paralysed, and one explanation might be the progressive cutting off of sensory impulses from the periphery, which are then no longer available to bombard the respiratory centre.—I am, etc.,

London, S.E.5. A. H. GALLEY.

REFERENCES

1 *MacLeod's Physiology in Modern Medicine*, 1941, pp. 600 and 604-5. Edited by P. Bard. Henry Kimpton, London.
2 *Anesthesiology*, 1944, 1, 77.

Large-intestine Colic

SIR,—I was interested in Sir Heneage Ogilvie's article on colic due to sympathetic deprivation (Oct. 9, p. 671). May it not be that the syndrome was caused by irritation of the coeliac sympathetic nerves by the tumour cells rather than by deprivation? On this supposition the irritation of the sympathetic nerves produced spasm of the sphincter ani and atony of the colon, as actually seen in one barium enema on Case 1 and as evidenced by the lower abdominal distension in both cases.

The cramp-like pains and increased peristalsis represented the attempts of the intact parasympathetic system to overcome the obstruction. Because the pain pathways through the sympathetic were intact these cramps were painful. I offer this as a suggested explanation and not in any dogmatic way.—I am, etc.,

Plymouth. J. LAWRENCE HENRY.

Breast-feeding

SIR,—I would like to suggest as a possible cause of the failure of lactation the unnatural sleeping arrangements of mother and baby in hospital. Breast-feeding is an intimate love act between mother and baby and should be followed by a satisfied sleep together in the warm intimacy seen in animals. Instead of this the baby is removed from its mother and put in an isolated cot (frequently in another room). This is emotional privation and often agony to the mother, who dares not protest against the accepted order of the hospital for fear of victimization by the nursing staff. The anxiety which inevitably follows is well known to cause suppression of lactation.—I am, etc.,

London, S.W.3. RACHEL PINNEY.

Out-patient Electric Convulsion Treatment

SIR,—In the hope of encouraging Sir W. P. Mallinson to make better use of the out-patient facilities at St. George's Hospital I want to ask a few questions and make some criticisms of his paper on electric convulsion treatment (Oct. 2, p. 641).

Dealing with the problems in the order in which Sir Paul discusses them there is first the question of technique. There is no uniformity at clinics throughout the country in respect of restraint of the patient during the convulsion, the administration of oxygen, or in the type of "box" used. Each clinic claims that its particular degree of restraint, or the absence

of any at all, is the best method, and all, like Sir Paul, use such unfortunate expressions as "an almost complete freedom from undesirable complications for a long time." Similarly, of oxygen one is told, "We see no need for it; our cases recover very rapidly, and we have no complications," or, "We always use it; we think it helps for this or that." For one make of "box" it is even claimed that the type of fit produced is less likely to produce fractures than the fit from boxes working on another system.

There is much lip service paid in high places to the need for research in psychiatry, but surely the need for an inquiry into these simple points is more urgent and so easily undertaken. It is only necessary to take a series of alternate cases with and without restraint, recording not only the radiological injuries but the complaints of backaches, and to give alternate fits with and without oxygen, recording the depth and duration of cyanosis and the incidence of post-operation headaches and confusion, to settle these points. The claim that one make of "box" produces a different type of fit, if taken seriously, could be settled by high-speed cinematography.

If the value of oxygen should be established, can it be shown that there are any respiratory movements to justify its use before the end of the clonic phase? Oxygen may be cheap, but it has important industrial uses, and it seems wasteful to turn it on during the period of apnoea.

Similarly, if the need for restraint is established I question whether the "Sutton" method described by Sir Paul is best suited to out-patient work. I have seen it used in two other clinics and think it is most alarming to the patient and wasteful of staff. I believe that whatever degree of restraint is required can be obtained by straps. Knowing the partiality of my Sutton friends to physiological theories I would point out that we are all positively conditioned to being strapped since our happy pram days. Anyone who has been taken aerobating knows how comforting are the hard tight straps that press one to the seat. But restraint by other people, particularly when gagged, is a highly provoking negative stimulus. Sir Paul says nothing about the use of pre-operative anaesthesia, to which I will refer later.

On the subject of selection of cases for out-patient treatment I find Sir Paul still more disappointing. It is already well known that the depressive patients are most likely to benefit, but every psychiatrist wants to know how he can usefully extend his range. What is the use of writing about "rigorous selection" and then quoting only two cases which from the details given come right outside the criteria and make spectacular recoveries? Are these the only occasions on which Sir Paul broke his own rules, or were there others with less happy consequences? Is there nothing more to say about the hysterical aphonia except that she was resistant to psychotherapy and wanted to go abroad? She sounds like a Miss Penicillin wafted into the clinic on a breeze of urgency.

My final criticism is with the manner in which Sir Paul deals with the patients' reaction to the treatment. This, he writes, "has been much over-emphasized." In actual fact from his own series five broke off because of their dread, ten ceased to attend (probably for the same reason), and 27 apparently became so bad that they had to be admitted during and after treatment. My estimate of the position is that not more than 5% of unanaesthetized patients are indifferent to the treatment, all the rest dislike it; 25% have to break off treatment because of their dread; and 50% have to summon all the courage they have got to be able to face it. Sir Paul does himself an injustice if he thinks that fearful patients are evidence of incorrect selection. I could show him one or two cases where treatment had to be broken off on account of the patient's dread, but after some weeks was restarted at the same clinic when anaesthesia had been introduced and brought to a satisfactory conclusion.

Is it not possible that the line drawn across the affective disorders by E.C.T., separating the depressive states from the anxiety states, is an artifact? Other findings in psychiatry suggest that they are different manifestations of the same disorder depending on the personality of the sufferer. It may be that the anxiety states fail to respond because the techniques so commonly employed are so desperately fear-provoking.

Every psychiatric clinic has its failed E.C.T.s from other hospitals, sometimes the "failed to attends," sometimes patients who admit having concealed their lack of progress as the only way they could see of avoiding any more shocks without offending their doctor. I hesitate to refer to my own practice because the numbers are of no statistical significance, but since the suggestions I have made are based chiefly on the experience I have gained from it I would say that I give my treatments single-handed, I use a home-made restraining device with webbing straps, I do not use oxygen, and I always use pentothal (about ¼ of a 0.5-g. ampoule, just sufficient to produce the first stage of relaxation). None of my patients has the slightest dread of treatment; some have failed to improve, but none have become worse.—I am, etc.,

London, N.W.1. J. F. Cooper.

POINTS FROM LETTERS

Traumatic Amputation

Dr. Cassia E. Williams (Goring-by-Sea, Sussex) writes: Some years ago, while I was working in the North Midlands, a case of this kind was brought into the hospital during "Wakes Week." The patient was a stout, middle-aged woman who had been riding on the roundabouts in a state of semi-intoxication. She failed to get off the platform when it stopped and was dragged round clinging by her left arm. This was completely avulsed at the shoulder-joint. There was hardly any bleeding, for the torn vessels were all twisted up, and the axilla looked quite clean. This patient died from shock before any attempt could be made to clean up the wound.

Scratching in Bed

Dr. D. Saklatvala (Bournemouth) writes: I have tried several more or less clumsy arrangements to prevent a child with a rash from scratching in bed. The mother of one of my little patients has recently devised a neat and ingenious method which I believe is new. Each arm of the child is placed in a woman's stocking. The tops of the stockings are pinned together behind, between the child's shoulders, and the stocking feet are tied together. The child is perfectly controlled and very comfortable.

Bilateral Stress Fracture of First Rib

Dr. W. E. Snell (Medical Superintendent, Colindale Hospital, London, N.W.9) writes: At about the same date on which you published a report of a case of bilateral stress fracture of the first rib by Capt. Roy Astley and Capt. A. Batty Shaw I observed a similar case in a theatre porter, aged 29, at this hospital. The *x* ray shows a clear-cut line running through both 1st ribs in the region of the scalene tubercle, and the appearance almost resembles a joint. This porter has been lifting patients on and off trolleys and theatre tables for a period of two years, and this type of lifting may well involve sudden stresses on the first rib. Although he gives no history of pain, and no tenderness can be elicited on palpation, it seems that this must be another case of bilateral stress fracture.

Failure of Kidney Function

Dr. O. S. Kohnstamm (London, N.W.2) writes: The following case shows, I think, some unique features. A man aged 68 was dying of cancer and secondaries (inoperable carcinoma of the pelvis of the left kidney). There was a probable involvement of the suprarenal glands. The patient had for some time refused solid food on account of severe nausea. On July 2 he ceased to pass urine; the bladder was empty. At the same time uraemic symptoms appeared. I gave 6 g. NaCl and 10 g. glucose in concentrated solution intravenously, which brought the patient round quickly. I told him to drink as much fluid as possible. Continuous drip proved unfeasible. On July 9 the patient passed 1½ oz. (42.6 ml.) of concentrated urine, which unfortunately could not be analysed properly. No urine appeared any more until the patient's death on July 18. Up to then the patient was comparatively clear and capable of making important decisions, at least at intervals. Blood urea was 240. All the time I had continued the concentrated injections, chiefly of glucose and salt solutions. The length of survival after the kidney had ceased to function and the clarity of mind are quite unusual. They may be connected with the lack of protein intake over a long period.

The Common Cold

Dr. G. C. Pether (Hadley Wood, Herts) writes: Although much research has been done to determine the infecting agent in coryza I would suggest that one aspect of the matter has been neglected. Is it not possible that the defensive mechanism in the very front line—namely, the mucosa—could be considered with advantage? I have in mind that certain external agents, notably dusts, fumes, and extremes of heat and dryness, may reduce the defences considerably. . . . The prophylaxis against catarrhal conditions is of great economic importance. For a time we are obliged to put up with scandalous travelling conditions, but it should be possible to discover whether the viruses of common catarrhs are helped or retarded by fumes of such substances as toluene, methyl alcohol, and sundry other solvents. I do not think any statistical approach under factory conditions can give the answers. But proper laboratory experiments might be more promising than some which have been performed.

Obituary

RICHARD P. STRONG, C.B., M.D.

Emeritus Professor Richard P. Strong, who was professor of tropical medicine at Harvard University from 1913 to 1938, died in Boston, Massachusetts on July 4 at the age of 76. Strong was educated at Yale and Johns Hopkins, graduating M.D. in 1897. He entered the American Army Medical Service and soon attracted attention by his work on tropical pathology in the Government Laboratory at Manila. He became professor of tropical medicine in the University of the Philippines in 1907, leaving there on his appointment to the chair at Harvard in 1913. During the first world war, as Colonel Strong, he became well known to British physicians and pathologists in France, and the "Report on Trench Fever" which he edited will be remembered by many. From 1917 to 1919 he served as a member of the Inter-Allied Sanitary Commission and in 1919 was made C.B. for his services to Britain.

Strong's work in tropical medicine took him to all parts of the world, civilized and uncivilized; and for his professional help to other countries besides his own he received many honours; he was either president of, or elected to, many learned societies. He was made an Honorary Fellow of the Royal Society of Tropical Medicine in 1936. He directed scientific expeditions to parts of the Amazon and in 1930 to the Belgian Congo and Liberia. His investigations in Amazonia foreshadowed the great Hylean Research Scheme which is now being inaugurated under the auspices of Unesco. Strong's two stout volumes on Liberia represent a wealth of scientific information and threw light on a corner of Africa which till then had remained in complete darkness. His most important scientific work, however, was carried out on onchocerciasis, which he had seen both in America and Africa; his investigations on this disease were embodied in a monograph published in 1934. He was head of so many commissions and committees that he was often away from his chair at Harvard, but all his efforts were everywhere and unremittingly directed to one object—the improvement of medical conditions in the tropical countries throughout the world. Strong lived up to his name: he was tireless and of a robust constitution. It was characteristic of him that when America came into the war in 1942 he at once rejoined the American Army Medical Service although he had then turned 70. For four strenuous years he served at Army Headquarters, where his personal knowledge of the Tropics and subtropics was of inestimable value both to America and to the Allies. During this period he also found time to help in bringing out two editions of *Stitt's Tropical Diseases*. He had a great capacity for friendship with those he liked, and nothing pleased him more than to entertain his many friends not only in his home in Boston but in his many clubs, which were scattered throughout the principal cities of two continents. Many doctors in Britain, as well as those who knew him only by his work, will regret the passing of a sincere friend to this country and of a great servant of tropical medicine.

P. P. COLE, O.B.E., M.B., F.R.C.S.

Mr. R. W. Raven writes: May I add my tribute to the memory of the late Mr. P. P. Cole (Oct. 30, p. 801)? We are conscious that a great personality has been removed from our midst and that we have lost a wise surgeon who contributed to our knowledge right to the end. He was an important master and his works have received the recognition which they merit. It is of interest to notice that the pathological investigations he made in 1913 concerning the intramural extension of carcinoma of the colon are quoted by the authors of a study of the same subject in the current number of *Surgery, Gynecology, and Obstetrics*. His was a mind which penetrated immediately into the essence of a surgical problem and was able to marshal the facts required for its solution. The scope of his surgical thinking was very wide and his experience in the art was commensurate, but his real love was reparative surgery. At the Royal Cancer Hospital I often sought his advice when planning a surgical procedure which would necessitate at some stage a reconstruction operation; he was always most helpful. P. P. Cole endeared himself to those who really knew him. Supremely honest and straightforward, with no thought of self, his opinion regarding affairs was most valuable and was coloured by fine judgment and clear vision. We will remember him and all the little human touches which he brought into our daily lives. Who can forget that figure pacing up and down a room with head bent considering some problem, the sudden arrest and crisp, "Look here, laddie." We cannot forget him, and the impact which he made on our lives will remain.

Surgeon-Captain Percival M. May, R.N., writes: As medical officer of the Royal Hospital School, Greenwich, for some thirteen years, Mr. Percival P. Cole operated on many of the surgical cases that I had to send into the Dreadnought Hospital. I often consulted him on cases that worried me, and I always found him ever kind and helpful. Many old boys of the R.H.S. have much reason to thank Mr. Cole for what he did for them. I often saw him operate and much admired his skill and dexterity, especially in cases of facial deformity.

Mr. E. S. Page writes: I should like to call attention to a point in surgical technique elaborated by my late lamented teacher, Mr. Percival P. Cole. I refer to the double-pointed needle which had the eyelet situated in the middle of the shaft of the needle. Using the movements of pronation and supination of the wrist, stitches could be placed with accuracy, speed, and precision that I have never seen surpassed, once the manœuvre had been mastered. Always a strong advocate of the "no-touch" technique, this needle enabled him to put into practice this admirable principle. Surgery has lost a great exponent in the passing of P. P.

Dr. L. Carlyle Lyon writes: May I add a few words of personal appreciation to the tributes already paid to the late Percival P. Cole? I had the privilege of working under him as house-surgeon at Queen Mary's Hospital for the East End in 1928, and the memory of his brilliant surgery, profound judgment, and not least his scintillating wit will remain with me for all time. His passing is a grievous loss to surgery as well as to his wide circle of friends and admirers.

Dr. CECIL PRYOR LANKESTER died on Oct. 13, at the age of 74, at his home in Peaslake, Surrey, where he had retired several years previously owing to failing health. Although coming of a medical family, his father and three brothers being members of the profession, his first inclination was towards law, but the urgent need for medical men in the missionary field caused him to throw up his legal studies and embark upon medicine. Immediately upon qualifying in 1897 he joined his brother at the C.M.S. Hospital at Peshawar, and worked as a medical missionary in India for nine years. Then he returned home and entered general practice at Guildford. Shortly afterwards he became one of the medical officers to the Royal Surrey County Hospital, and he continued with this work until he was compelled to give up because of his increasing deafness. Dr. Lankester then took up radiology, and until failing health finally compelled him to retire, at the age of 64, he held the post of radiologist, and was subsequently in charge of the electrical and *x*-ray therapy department, at the hospital. Lankester was keenly interested in ambulance work and rendered valuable service in this field during the first world war. He was for many years honorary divisional surgeon to the local St. John's Brigade, and during this time he gave regular classes in first-aid and nursing. For these services he was made an honorary associate of the Order of St. John and assistant commissioner of the brigade in Surrey. When war broke out in 1939 his health prevented him taking an active part in ambulance work, but his energetic spirit and desire to do something would not allow him to rest, and, as he was always keen on engineering, he occupied himself in making delicate machine parts on his private lathe at home. Lankester was an ardent evangelical churchman, keenly interested in mission work and the Y.M.C.A., and for eight years he was vicar's warden at St. Saviour's Church. He was a member of the British Medical Association for thirty years, and served on the Organization Committee from 1919 to 1922 and on the Insurance Acts Committee and the Organization of Medical Students Subcommittee from 1919 to 1921. He represented his constituency at the

Annual Representative Meetings on six occasions, and he was also honorary secretary of the Surrey Branch from 1922 to 1924, and chairman of the Guildford Division in 1924–5. Lankester will be remembered for his quiet, courteous, and unassuming manner, his devotion to religion, and his unbounded energy and desire to be of service, even when in failing health. He leaves a widow and three sons, one of whom, Dr. Lionel W. A. Lankester, is in practice at Guildford.—A. F. T.

Dr. Edward Augustus Bullmore died in London on Oct. 29 at the age of 73. Dr. Bullmore was born in Budock, Cornwall, in 1875, and educated at Falmouth School and at University College Hospital, London. He qualified in 1898, and took the Edinburgh F.R.C.S. in 1903. He held several house appointments at his teaching hospital, and was also house-physician at the North Eastern Hospital for Children. Subsequently he was a ship surgeon with the P. & O. Line, and in the 1914–18 war he served with the R.A.M.C. Dr. Bullmore had been a member of the British Medical Association for over forty years, and he was president of the Cambridgeshire and Huntingdonshire Branch in 1936–7.

Dr. Max F. Tylor writes: For the past thirty years I have only occasionally seen my old friend Dr. E. A. Bullmore, but for a decade or more previously I was in partnership with him and the late Dr. Rupert Butterworth at Wisbech. Long ago as those days seem, their memory is still very green, and I recall with great happiness my association with him. He was a most loyal colleague, and his outstanding sincerity and devotion to duty made him loved and trusted by all. Like many men of his stature, he had a gentle voice. He had nothing petty in his disposition, and spoke ill of no man. His professional ability was high, he always kept in touch with the advances of medical science, and his good work will long be remembered in the district in which he spent practically his whole professional life. Besides his professional work he had many other interests, and had long looked forward to a greater enjoyment of these on his retirement to his native Cornwall. This, alas, was not to be, for owing to the war his retirement was delayed, he still worked on in practice, and when at length he did retire the years he had left to him were sadly marred by frequent and serious illness, borne without complaint. He died not in his native county but in the hospital in which both he and his wife had served.

Dr. Alexander Cowie Paterson died at Millbrook, Plymouth, on Oct. 22 at the age of 54. He was educated at Kemnay High School, Aberdeenshire, and went on to Aberdeen University, where he graduated M.B., Ch.B. in 1918. He joined the R.A.M.C. immediately and served for some time with the Army of Occupation in Germany. Towards the end of 1919 Dr. Paterson entered the West African medical service and went out to the Gold Coast. He was appointed S.M.O. of Sierra Leone in 1929, and returned to the Gold Coast a year later. Early in 1938 he had to resign from the service on account of ill health, and he then joined the staff of the Ministry of Pensions. After nearly three years at the Ministry he went into general practice at Millbrook and soon became well known as a painstaking and conscientious practitioner. The sympathy of his colleagues, his friends, and his many patients will be extended to his wife and his daughter.

Dr. Alfred Cox writes: Your generous and well-deserved tribute (Nov. 6, p. 839) to my old friend C. H. Milburn omits one of his activities of which he was justly proud. Always interested in the military side of medicine, he was an active member of the B.M.A. committee whose report was largely responsible for the establishment of the R.A.M.C. fifty years ago. When I attended the jubilee celebration of the Corps I was pleased but not surprised to hear that Milburn's memory and the records he had preserved had been of great service to those responsible for the celebration. I had known Milburn since we were members of the Constitution Committee of 1900 whose labours resulted in the transformation of the Association into a representative and democratic body. I am now the only survivor. Milburn was hoping to live to take part in the Harrogate Annual Meeting next year, and a recent letter to me showed no signs of failure either of his intellectual powers or of his interest in our Association.

Professor E. J. King, Professor of Chemical Pathology at the British Postgraduate School, Hammersmith, visited Oslo under British Council auspices from Oct. 17 to 21 to address the Internal Medicine Society on "Tests of Liver Function," the University Clinic on "Recent Advances in the Theory and Treatment of Silicosis," and the Physiological Society on "The Accurate Determination of Haemoglobin."

Medical Notes in Parliament

HOUSE OF LORDS

Subscriptions to Hospitals

Lord Saltoun, in the House of Lords on Nov. 2, asked whether the removal of hospital collecting-boxes from railway stations was not contrary to the Government's expressed desire that private subscriptions to hospitals should continue.

Lord Shepherd, replying for the Government, said the Minister of Health and the Secretary of State for Scotland hoped and were confident that private generosity, which had in the past done so much for the hospital service, would not come to an end. But they did not consider it proper that the new governing bodies of hospitals, which were public bodies no longer dependent on private charity, should themselves appeal for funds. Appeals made by independent voluntary organizations on behalf of the hospital service or of particular hospitals for money to provide extras and amenities outside the ordinary running of the service were a wholly different matter.

HOUSE OF COMMONS

Payment of Specialists

Sir Ernest Graham-Little asked whether Mr. Bevan knew that many young consultants were undergoing severe financial privation owing to the delay in the payment of their remuneration for three months, during which time they had to pay interest on overdrafts at their banks; and whether he would take measures to prevent repetition of this delay.

Mr. Bevan replied on Nov. 2 that certain Regional Hospital Boards were unable, owing to initial staffing difficulties immediately after the appointed day, to pay specialists before the end of September. He saw no reason why this difficulty should continue. The Board which Sir Ernest had in mind were now paying monthly or quarterly at the wish of the specialist.

Mr. Hastings asked the Minister of Health to give instructions to Regional Hospital Boards that advertisements for senior specialist staff should appear in the medical press and not in the lay press only.

Mr. Bevan replied that Regional Hospital Boards were required by Regulation 5 (1) of the National Health Service (Appointment of Specialists) Regulations, 1948 (S.I., 1948, No. 1416) to advertise vacancies on the specialist staff of hospitals in two or more professional journals. He promised to inquire into any case where Mr. Hastings believed that this regulation had not been followed.

Cost of N.H.S.

Sir Stafford Cripps stated on Nov. 2 that the National Health Service and the National Insurance schemes would have been in force for the last nine months of the current financial year. He estimated that during this period the cost to the taxpayer of the former would be equivalent to an income tax of about 1s. 0½d. and that the contributions of the Exchequer to the latter would be equivalent to one of about 8½d.

Basic Salary

Mr. Rankin on Nov. 4 asked why it had been decided that new entrants to the general practice of medicine were not to receive the basic salary as of right.

Mr. Bevan said this had been done to meet the wishes of the medical profession themselves.

Mr. Hastings inquired in how many cases applications for basic salary had been received by executive councils in England and Wales, and in how many cases this had been granted.

Mr. Bevan replied that precise figures were not available but that more than a thousand applications had been granted. The matter was primarily for the executive councils, and unless appeals were made he did not receive the information at this stage.

Dr. Segal asked whether Mr. Bevan agreed that the attempt on the part of the medical profession to impose a means test on doctors who applied for a basic salary was an effort to defeat the whole object of the basic salary.

Mr. Bevan said it would be undesirable for him to make a comment on the representations of the medical profession. He must deal with its representatives. If doctors had individual complaints they should make them first to the profession, so that he could hear them through the profession.

Food-poisoning

Mr. CHARLES TAYLOR on Nov. 4 asked Mr. Bevan to introduce legislation making it compulsory for handlers of food to be examined periodically to ascertain that they were not carriers of disease such as paratyphoid.

Mr. BEVAN was afraid the very elaborate arrangements which would be needed were at present impracticable, and that the present state of knowledge would not justify them.

Mr. ORBACH asked whether the Minister of Health, in view of the number of cases of food-poisoning recently reported, was satisfied that existing legislation and regulations were adequate to deal with the manufacture and sale of impure and unclean foods.

Mr. BEVAN said that so far as this could be controlled by regulation there were already wide powers. Whether further practical measures could usefully be taken was engaging the attention of his Department in conjunction with the Ministry of Food.

Mr. HASTINGS asked Mr. Bevan whether his attention had been called to the danger of the dissemination of typhoid fever, infantile paralysis, and other diseases as the result of the lavatories of main-line trains discharging directly on to the track, and what action he proposed to take.

Mr. BEVAN replied that there was hardly any evidence at present that disease was spread in this way. His medical officers kept in close touch with current research in this field.

Press at Committee Meetings

Mr. BEVAN said the function of Hospital Management Committees was the day-to-day control and management of their hospitals. While he hoped they would take every opportunity of keeping the closest contact with public opinion, the admission of the Press to their meetings was a matter for their own decision.

Controls Off

Mr. WILSON on Nov. 4 set out a long series of relaxations or modifications in Board of Trade controls. These included the relaxation from last June of administrative control of distribution of lactic acid, edible and *B.P.*, and of calcium and sodium lactates; a similar relaxation, from October, of the control of potassium permanganate; and change from public to private purchase of pyrethrum. During November and December he proposed to revoke the statutory control of amyl-alcohol, carbonate of potash, dehydrated castor oil, methylated spirit, and paraformaldehyde, and to abandon the permit scheme for distribution of vacuum flasks.

Treatment in Switzerland

On Nov. 4 Mr. BEVAN told Mr. Anthony Greenwood that he had no power to make it possible for regional boards to pay for the treatment of tuberculous cases in Switzerland. Mr. Greenwood asserted that this had been the practice of some county and county borough councils before the National Health Service Act came into operation. Mr. Bevan said he had no power to authorize expenditure of that kind. He could not agree that patients were worse off than before the Act. If further forms of treatment could be given in other countries, the remedy was not to send British patients there but to make that form of treatment available here. He did not accept that forms of treatment were available elsewhere which could not be provided here. It was undesirable that they should spend large sums of money in sending patients abroad. A committee working in conjunction with the Treasury considered whether hardship cases could be sent abroad. That was a matter for the Treasury and not for him.

Mr. GREENWOOD said there was a serious shortage of beds for treating tuberculous cases and if some patients could be sent abroad it would be a relief.

Mr. BEVAN replied that there was no serious shortage of beds. The most serious shortage was of staff. The Ministry was doing its best to recruit staff. It was far better at present to use its energies in that direction.

Disseminated Sclerosis

Answering a question put on Nov. 4 by Mr. JANNER, Mr. HERBERT MORRISON said observations on cases of disseminated sclerosis were being made by neurologists in hospitals throughout the country in the hope of gaining a better understanding of its cause and nature or of improving its treatment. Investigations were in progress at the Radcliffe Infirmary, Oxford, and at the Middlesex Hospital, London. Much research had been done in the past with Government aid and otherwise. Such aid had not been sought for either of the special investigations he had named, but support would be forthcoming, if required, for exploiting any promising new idea on the subject. One must be selective as to a promising line of research, but his Department was on the look out for it.

Air Ambulances

Mr. LINDGREN said on Nov. 3 that it was necessary on occasion to remove patients by air ambulance at short notice from some Hebridean islands to hospitals on the mainland. Where ground facilities were available patients were so removed at all hours of the day and night. He would ask the Scottish Health Department to communicate with medical men in the Hebrides to make this information more widely known.

Alien Doctors.—The number of medical practitioners enabled to practice in this country by virtue of registration in the foreign list of the *Medical Register* under the Medical Practitioners and Pharmacists Act, 1947 since Jan. 1 last is 932, of whom all but 85 had previously been temporarily registered. The number of dental practitioners registered in the foreign list of the *Dentists' Register* this year is 37.

Joined Health Service.—Mr. BEVAN told Mr. CHETWYND on Nov. 4 that 18,165 general practitioners and 8,343 dentists had joined the Health Service. The proportion of the population which had joined was 93.1%.

Cars for Nurses.—The possibility of improving the supply of motor-cars for midwives and home nurses is being examined. Arrangements already exist for motor dealers to give preference to midwives.

Streptomycin.—The Minister of Health is satisfied that there are sufficient supplies of streptomycin in the country to benefit all war casualties who require this treatment.

Break-down Denied.—About 1,750,000 persons have applied for free dental treatment since the setting up of the National Health Service. Mr. BEVAN denied that doctors and dentists were breaking down under the strain put upon them by the Service.

Medico-Legal

SCHIZOPHRENIA AND RESPONSIBILITY

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

In the early morning of May 15 a night nurse at the Queen's Park Hospital, Blackburn, missed one of the children from her ward. Search was made at once, and the little girl's body was found in a near-by field. She had been raped, and had been killed by having her head battered against a wall. Surprisingly, the murderer had left behind a set of finger prints on a bottle, and the police matched these against no fewer than 46,000 prints taken from men known to have been in Blackburn on the night of May 14. The culprit was found to be a youth of 22 named Peter Griffiths. In a statement he made to the police he said that he had spent the evening drinking, that a man he did not know had given him a lift in a car and dropped him outside the hospital, that he had got over the railings and later found himself outside a ward where there were children. He took off his shoes and left them outside, tried the door, which opened to his touch, and went in, but heard a nurse at the sink and came out again. He re-entered the ward, went into the kitchen, and picked a bottle off a shelf at random, took it into the ward, and left it on the floor. Thinking he heard a nurse, he turned round, lost his balance, and woke up one of the children, who started to cry. He hushed her, but another child woke, so he took the first in his arms out into the field and put her on the grass. As she would not stop crying, he lost his temper and swung her by the feet against a wall until she died. He went back into the hospital, put his shoes on again, and went back to where he had left the child and then to his home. He read about the murder in the paper next day, but was not shaken, and behaved normally until he was arrested. He expressed regret and sorrow for the child's parents, and "hoped he got what he deserved."

At his trial at Lancaster Assizes before Mr. Justice Oliver it appeared that he had spent two years at the hospital as a child of 8, and that a week before the murder he had heard that his half-brother's daughter, aged 2¾ years, was in the hospital. His father had been confined in a mental hospital for nine

months in 1918 suffering from paranoid schizophrenia, and at the age of 6 he himself had fallen on his head out of a milk float. His disposition and habits were childish. A few days before the murder his girl friend had broken off their association.

Dr. Alastair Robertson Grant, medical superintendent of Whittingham Mental Hospital, said that he regarded Griffiths as an early case of schizophrenia and considered that he had been suffering from the disease at the time of the murder. He thought that the prisoner had known what he was doing, but had not fully appreciated that he was doing wrong. In cross-examination he said that he considered that the mania began when Griffiths had started to attack the girl and had ended after her death. It was very common in cases of schizophrenia to have a blank in memory, but not invariable. He agreed that Griffiths's description of his movements in the hospital ward were those of a man, alert and conscious, who knew he was doing something he should not be doing. Griffiths might not have remembered committing the assault on the girl, and that might have been the reason why he had not mentioned it in his statement.

The judge asked why he should forget that if he remembered everything else, and the witness replied that that was the sort of partial amnesia that occurred in drink. In ordinary schizophrenia he would be rather surprised to find that a man had remembered so much and had forgotten such an important thing. It was quite possible for a schizophrenic to have a maniacal attack for a short time and then recover himself quickly afterwards, with full knowledge of what had happened. Prosecuting counsel asked why from the prisoner's statement the witness had fixed the time of the maniacal attack at the time he had placed the child on the grass. The judge interposed to suggest that if the prisoner had been in a schizophrenic mania he would have dashed the girl down in the ward, and the witness replied, "Yes."

The police surgeon, Dr. Gilbert Bailey, said in cross-examination by Griffiths's counsel that he considered that the man who did this act must have been in a state of maniacal frenzy, but that normally such a man could not be certified. He had formed the opinion that the man who committed the murder was a schizophrenic, and agreed that a person suffering from that disease might suffer a defect of reason, as a result of which he might not know at the time that what he was doing was wrong. Dr. Francis Brisby, the principal medical officer at Liverpool prison, testified that from observation and examination he had found no evidence of any disease of the mind.

The judge said in his summing-up[2] that there was abundant evidence that this might have been the act of a lunatic and that Griffiths might have been a sufferer from schizophrenia, but the vital matter was, Did he know that what he was doing was wrong or did he not? After an absence of 23 minutes the jury found the prisoner guilty, and the judge said that the jury had found him guilty of a crime of the most brutal ferocity and he entirely agreed with their verdict. He sentenced Griffiths to death in the traditional words, which since the introduction of the Criminal Justice Bill judges have usually replaced by the new shorter form.

M'Naghten Rules

The test of irresponsibility for a criminal act on the ground of insanity is still contained in the "rules in M'Naghten's case," formulated over one hundred years ago by the judges of the King's Bench, not in the course of a trial but on the request of the House of Lords Chamber. In this the ruling is unique as a statement of a valid legal principle. It lays down that in order to establish a defence on the ground of insanity it must be clearly proved that at the time of committing the act the party accused was labouring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing, or if he did know it that he did not know he was doing what was wrong. In the present case, although the quality of the act gave rise to strong suspicion of the sanity of the prisoner, and he clearly had a personal and family history of mental instability, there was no reasonable doubt that he knew what he was doing and that it was wrong. The defence of irresistible impulse is not open to a defendant in our courts: if it had been, his advisers would in all probability have made it their principal defence. This is a typical borderline case of the kind which raises again the question of whether the M'Naghten rules, so clearly anachronistic and out of line with modern knowledge of the mind and of responsibility, ought any longer to be tolerated. Their amazing persistence is due to several factors, but probably one of the most important is that in practice they work unexpectedly well, and that in the few cases in which they would allow an irresponsible offender to be condemned the Home Secretary's exercise of the Royal Prerogative stands behind the court to prevent a miscarriage of justice.

[1] *Manchester Guardian*, Oct. 16, 1948.
[2] *The Times*, Oct. 19, 1948.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Edgar Douglas Adrian, O.M., M.D., F.R.C.P., F.R.S., Professor of Physiology in the University, has been appointed a Manager of the Pinsent-Darwin Fund for three years from Jan. 1, 1949, and Henry Albert Harris, M.D., Professor of Anatomy in the University, a Manager of the Charles Slater Fund for four years from Jan. 1, 1949.

The Faculty Board of Medicine has approved the courses in pharmacology given at the Middlesex Hospital, University College Hospital, and St. Mary's Hospital Medical Schools.

The Raymond Horton-Smith Prize for 1947–8 has been awarded to Dr. David Vérel, of Corpus Christi College.

Professor Geoffrey Jefferson, F.R.S., will deliver a lecture on "Cerebral Compression in Man" in the Physiological Laboratory theatre of the University on Friday, Dec. 3, at 5 p.m. The lecture is open without fee to members of the University.

The following medical degrees were conferred on Oct. 16:

M.D.—O. C. Lloyd.
M.B., B.CHIR.—*H. Middleton, *J. Wedgwood, *N. R. Greville, *A. Hill, *I. C. Peebles.

* By proxy.

UNIVERSITY OF LONDON

The following awards have been made to students of the course for the Academic Diploma in Public Health at the London School of Hygiene and Tropical Medicine for the year 1947–8: *Chadwick Prize*, P. M. Elliott; *Hecht Prize*, G. Ladkin and N. S. Hepburn; *Industrial Medical Officer's Prize*, P. M. Elliott and D. F. Eastcott; The Duncan Medal in the course for the Diploma in Tropical Medicine and Hygiene (England) at the school for the year was awarded to Hing-Yui Mok.

The title of Professor Emeritus of Bacteriology in the University has been conferred on Sir Alexander Fleming, M.B., F.R.C.P., F.R.C.S., F.R.S., Professor of Bacteriology at St. Mary's Hospital Medical School since 1928.

The title of Professor Emeritus of Medicine in the University has been conferred on Sir Francis Fraser, M.D., F.R.C.P., Professor of Medicine and physician at St. Bartholomew's Hospital Medical College from 1920 to 1934 and Professor of Medicine at the British Postgraduate Medical School from 1934 to 1946.

Professor Robert Wilfred Scarff, M.B., B.S., has been appointed to the Bland-Sutton Chair of Pathology tenable at the Middlesex Hospital Medical School, from Oct. 1.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

HYGIENE.—Marjorie J. Adams, Mary P. E. Alban, F. W. Beswick, C. H. Burman, Maldwyn L. Cattell, R. B. Davies, Elizabeth B. Dew, D. C. Dymond, L. Elton, A. R. Evans, K. Gammon, P. H. Griffiths, E. I. Gwynne, G. E. Heard, J. I. Hopkins, June D. James, Ruth E. Lewis, Mair G. Lloyd, D. P. Miles, Rhona E. Morgan, Buddug Phillips, H. M. N. Rees, J. A. E. Richards, R. M. Richards, *D. C. Saunders, C. P. Seager, *J. A. Stanton, Brenda M. Thomas, D. G. H. Thomas, E. Thomas, J. G. H. Thomas, S. Thomas.

* With distinction.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the annual meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on Nov. 1, the following officers were elected: *President*, Dr. W. R. Snodgrass; *Visitor*, Mr. Walter W. Galbraith; *Honorary Treasurer*, Mr. Matthew White; *Honorary Librarian*, Dr. Archibald L. Goodall; *Representative on General Medical Council*, Mr. Andrew Allison.

The Services

TERRITORIAL DECORATION

The Efficiency Decoration of the Territorial Army has been conferred upon Colonel W. Graham, O.B.E., Major (Honorary Lieutenant-Colonel) D. A. Langhorne, M.B.E., and Major A. G. Emslie, R.A.M.C., T.A.

Flight Lieutenant Alexander Mather, R.A.F.V.R., has been appointed M.B.E. (Military Division) for distinguished service in Palestine.

EPIDEMIOLOGICAL NOTES

Poliomyelitis in the British Zone

The peak of the outbreak of poliomyelitis in the British Zone of Germany was reached between Sept. 18 and 25, when 267 cases and 34 deaths were recorded. The following week a decline began, and this has continued. The total number of cases reported during September was 937 with 67 deaths, almost double the figure for the previous month. Although the incidence has been higher this year than in September last year the mortality has been much lower. This is certainly due to better certification, and does not represent a true decreased mortality.

The 1948 British film on poliomyelitis, "dubbed" in German, has been shown in Hamburg and Berlin to large audiences of medical men.

Discussion of Table

In *England and Wales* an increase in the number of notifications was recorded for measles 767, whooping-cough 214, diphtheria 12, and a decrease was reported for scarlet fever 130, acute pneumonia 53, and dysentery 15.

The largest rises in the notifications of measles were Lancashire 179, Lincolnshire 126 (mainly due to the appearance of an outbreak in Grimsby C.B., where the cases increased from 16 to 94), Yorkshire West Riding 69, Southampton 82, Gloucestershire 58. A small increase in the incidence of whooping-cough was 43 in Cornwall. The notifications of diphtheria have increased by 27% during the past fortnight; during the week the largest rises were London 8, Devonshire 7, Middlesex 6, and the largest decrease was 9 in Warwickshire. The fall in the incidence of scarlet fever was confined to a few counties, and the largest decreases in notifications were Essex 37, Lancashire 33, and Yorkshire West Riding 32.

Only one further case of typhoid fever was notified from Shropshire, Oswestry R.D., where during the past seven weeks 101 cases have been notified. This outbreak of typhoid occurred in the Orthopaedic Hospital. An outbreak of dysentery involving 22 persons was notified in Somerset, Bridgwater R.D. Only 7 further cases of dysentery were notified from Essex, Hornchurch U.D., where 50 cases were reported last week. In Lancashire a rise of 12 occurred in the notifications of dysentery. The largest returns of poliomyelitis were Lancashire 9 (Manchester C.B. 3); London 7; Kent 5; Surrey 5.

In *Scotland* a fall was recorded in the notifications of scarlet fever 47 and diphtheria 14, while a rise was reported for measles 26 and whooping-cough 12. There was a small increase in the notifications of scarlet fever in the cities of Edinburgh and Glasgow; elsewhere the incidence tended to diminish.

In *Eire* a decrease occurred in the notifications of scarlet fever 17, diarrhoea and enteritis 27, and measles 12; the only rise of any size was 30 for whooping-cough. In Dublin C.B. the incidence of the common infectious diseases of childhood was unchanged. Notifications of diarrhoea and enteritis in Dublin C.B. were 17 fewer than in the preceding week.

In *Northern Ireland* the notifications of scarlet fever increased by 12, mainly owing to an outbreak involving 10 persons in Londonderry C.B. In Belfast C.B. the notifications of measles increased from 66 to 116.

Week Ending October 30

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,374, whooping-cough 2,060, diphtheria 129, measles 6,211, acute pneumonia 418, cerebrospinal fever 22, acute poliomyelitis 66, dysentery 68, paratyphoid 7, and typhoid 10.

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INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Oct. 23.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948 (a)	(b)	(c)	(d)	(e)	1947 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	31	5	17	3	1	34	1	19	—	1
Deaths		2	—				—	1		
Diphtheria	153	16	29	12	7	238	24	49	13	4
Deaths	—	—	1	—	1	3	1	—	—	—
Dysentery	99	5	62	1	1	340	3	30	—	1
Deaths				—	—				—	—
Encephalitis lethargica, acute	1	—	—	—	—	—	—	2	—	—
Deaths		—					—			
Erysipelas			32	12	2			32	12	3
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				24					84	
Deaths	26	3	2	2	5	69	7	13	12	4
Measles*	5,303	86	100	37	116	1,981	41	105	213	2
Deaths†			—	—	—	—	—	—	—	—
Ophthalmia neonatorum	53	6	15	1	1	53	7	13	1	—
Deaths										
Paratyphoid fever	4	—	1 (B)	—	—	3	—	1 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	426	24	2	1	1	482	33	5	2	2
Deaths (from influenza)‡	10	1	1	—	—	12	2	1	—	—
Pneumonia, primary			153	16				238	21	
Deaths	175	31		5	6		30		7	6
Polio-encephalitis, acute	4	—				29	4			
Deaths							—			
Poliomyelitis, acute	76	7	5	2	—	251	23	54	6	7
Deaths§	4	1					2			
Puerperal fever		—	12		—		2	16		—
Deaths										
Puerperal pyrexia‖	115	12	14	—	1	125	12	3	2	1
Deaths		—					1			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,389	86	277	189	48	1,452	132	308	73	58
Deaths†			—	—	—	—	—	—	1	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	13	1	4	3	—	4	—	2	17	—
Deaths	2	—	—	1	1	1	—	—	1	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	2,163	120	95	52	17	1,003	78	54	30	1
Deaths	1	—	1	—	—	1	1	—	3	—
Deaths (0–1 year)	267	39	30	17	9	354	39	61	35	15
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,371	710	534	158	104	4,364	729	578	177	93
Annual death rate (per 1,000 persons living)			10·8	9·9				12·0	11·2	
Live births	7,270	1208	918	369	234	7,765	1290	1018	429	237
Annual rate per 1,000 persons living			18·5	23·1				20·5	27·1	
Stillbirths	193	24	25			254	32	24		
Rate per 1,000 total births (including stillborn)			27					23		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative) county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

Medical News

Information on Hospital Management

The King Edward's Hospital Fund for London has established a Division of Hospital Facilities comprising an information bureau; an advisory service; a library of hospital books, journals, and plans; and an index to hospital literature. The bureau will provide information on hospital organization and management to hospital officers, holders of bursaries, students of hospital administration, hospital committees, and other organizations and individuals. Information may be obtained from the Director, Captain J. E. Stone, 10, Old Jewry, London, E.C.2.

Jacobaeus Memorial Lecture

In accordance with the statutes of the Professor Jacobaeus Memorial, created by the Nordisk Insulin Foundation in 1939, a lecture is given every year under the auspices of the Memorial on some aspect of clinical or experimental medicine within the field of organotherapy and endocrinology. Professor F. G. Young, of University College, London, gave the lecture on Oct. 5 at the Rikshospital in Oslo, the chair being taken by Professor Olav Hanssen. The subject of Professor Young's lecture was "The Relation of the Pituitary Gland to Diabetes Mellitus." The first Jacobaeus lecture was given by Professor Key in Sweden, and the second in Copenhagen in 1947 by Professor C. H. Best, of Toronto.

Industrial Rehabilitation

The Ministry of Labour and National Service announces that it is setting up 10 industrial rehabilitation centres in addition to three already opened at Birmingham, Coventry, and Felling-on-Tyne "to give men and women who have got out of touch with working conditions through absences caused by sickness, accident, or by long unemployment an opportunity to become gradually accustomed to the mental and physical exertions of a full day's work, and to regain their confidence to tackle a job, either of the kind which they were doing before they became disabled or of some other kind for which they are now more suited." For several years past a residential industrial rehabilitation centre has been in operation at Egham, in Surrey. The experiment has been so successful that some time ago the Ministry began to prepare for the establishment of six other centres on similar lines, but there is difficulty in obtaining suitable premises. The Ministry has therefore decided as an interim measure to use some of the accommodation which has become available at certain Government training centres as non-residential rehabilitation centres. The course at these new units will be broadly on the lines of the course given at the Egham centre, the objects being: (1) To restore to fitness and confidence persons who, although not in need of active medical treatment, are not fit for full-time employment; (2) to discover by observation and tests and with medical advice what are the personal factors impeding satisfactory settlement in employment, and what types of employment are most likely to lead to permanent resettlement; and (3) to give guidance to placing-officers of the Ministry about the effect of a disability on a person's working capacity. The maximum length of the course will be 12 weeks, but in most cases it is expected that a month or six weeks will be sufficient. On completion of the course special efforts will be made to find the type of employment or training recommended by the specialist officers who have had the person under observation and test. Those undergoing the course will be eligible for allowances on a scale which is graduated in the same way as the general scale of allowances for people undergoing training at a Government centre. A leaflet explaining the scheme is being issued to organizations in contact with people needing industrial rehabilitation. Another leaflet is being provided for distribution to intending applicants for the course.

Prescription Check

Addressing the executive council for Lanarkshire recently, Sir William Marshall, the chairman, is reported by the *Scotsman* (Sept. 30) as having said that during August 73,000 prescriptions had been issued in the county at a cost of £12,000. Referring to prescriptions for such items as wigs, barley sugar, and sherry, he said that, although it was earnestly desired to give applicants any form of treatment required, it seemed obvious that at a comparatively early date some system of supervision with regard to prescriptions would have to be introduced, otherwise the burden on the State for drugs and appliances might well reach an extent which could not be justified. Discussing the applications for spectacles in Lanarkshire, he said that what alarmed him was that only 1% of the applicants had been examined by an ophthalmic medical practitioner. He did not think it was wholly satisfactory that in 99% of cases eyes were not being examined by an eye specialist to see if some form of treatment would not alleviate the eye condition.

Films on the "Neuraxis"

Owing to Professor Pedro Belou's inability to be in London on Nov. 15 to show his films on the "Neuraxis" the meeting at the Royal Society of Medicine announced in "Coming Events" last week at page 844 has been cancelled.

Food Hygiene Exhibition

Ilford Borough Council recently held an exhibition of "Food and Drink Infection Precautions." Photographs and diagrams illustrated how bacteria contaminate food, how the chain of infection may be broken by proper hygiene, and the methods adopted to suppress an outbreak of food-poisoning. The medical officer of health, Dr. J. H. Weir, spoke at the exhibition.

Dr. Robert J. Peters

Dr. Robert J. Peters, Deputy Chief Medical Officer, Department of Health for Scotland, sailed for the U.S. recently to attend the American Public Health Association's annual conference at Boston. He and Dr. A. H. Gale, of the Ministry of Health, will attend a subcommittee on the control of infectious diseases set up by the Committee on Research and Standards of the American Public Health Association. Dr. Peters will conclude his U.S. tour with visits to Washington and to important centres of medical and public health education at Boston, Baltimore, and New York. He will return to Scotland at the beginning of December.

Sir Thomas Houston

Sir Thomas Houston, consulting physician to the Royal Victoria Hospital, Belfast, and Pro-Chancellor of Queen's University, has been presented by his colleagues with his portrait in oils, painted by Mr. Frank M'Kelvey. The presentation was made by Professor W. W. D. Thomson, who referred to the affection in which Sir Thomas was held by the profession, his services to the community, and his work in bacteriology over the last fifty years.

Mr. Clifford Ellis Roberts

The Sultan of Zanzibar has conferred the Order of the Brilliant Star of Zanzibar, Insignia of the Fourth Class, upon Clifford Ellis Roberts, O.B.E., B.M., F.R.C.S.Ed., Specialist Officer, Health Department, Zanzibar, in recognition of valuable services rendered by him.

Save the Children Fund

The Save the Children Fund announces that its hospital team is being withdrawn from the hospital at Schlutup, Schleswig-Holstein. The Fund has run this hospital of 100 beds since July, 1945, for the care of children from the neighbouring D.P. camps, and has also maintained a convalescent home in conjunction with the hospital. Local people were employed so far as possible and to an increasing extent, so that it might ultimately be transferred to the German authorities.

COMING EVENTS

London Medical Exhibition

The London Medical Exhibition will be held in the New Hall of the Royal Horticultural Society (Greycoat Street, Westminster, S.W.) from Monday, Nov. 15, to Friday, Nov. 19, from 11 a.m. to 6.30 p.m. each day.

Empire Rheumatism Council

The autumn week-end course arranged by the Empire Rheumatism Council will be held at the Society of Apothecaries of London, Black Friars Lane, Queen Victoria Street, E.C., on Friday, Saturday, and Sunday, Nov. 26, 27, and 28. At 4.30 p.m. on Nov. 26 Dr. W. S. C. Copeman will open the course with "A Survey of the Rheumatic Diseases," and at 5.30 p.m. Dr. G. D. Kersley will discuss "Gout." The programme for the other two days is as follows: Nov. 27, 10 a.m., Dr. F. Dudley Hart, "Spondylitis"; 11.15 a.m., Dr. W. S. Tegner, "Rheumatoid Arthritis"; 2 p.m., Dr. R. E. Bonham-Carter, "Juvenile Rheumatism"; 3 p.m., Dr. Oswald Savage, "Fibrositis"; 4.30 p.m., Mr. J. H. Kellgren, "Differential Diagnosis of Backache." Nov. 28, 10 a.m., Dr. Hugh Burt, "Physical Medicine in the Rheumatic Diseases"; 11.15 a.m., Mr. W. D. Coltart, "Orthopaedic Aspects of the Rheumatic Diseases." The fee for the course (limited to 100) is £2 2s., payable at least one week before to the general secretary of the Council at Tavistock House (North), Tavistock Square, London, W.C.1.

Course in Physical Medicine

A course in preparation for Part I of the Diploma in Physical Medicine will be held at Guy's Hospital commencing on Monday, Jan. 10, 1949, provided there are a sufficient number of candidates. Further information regarding this course can be obtained from the Dean of the Medical School, Guy's Hospital, London, S.E.1.

SOCIETIES AND LECTURES

Monday

HUNTERIAN SOCIETY.—At Society of Apothecaries of London, Black Friars Lane, Queen Victoria Street, E.C., Nov. 15, 8.30 p.m. *"That the Practice of Instructing the Layman in the Nature and Treatment of Disease is Being Carried to Excess,"* to be proposed by Dr. W. J. O'Donovan and Miss Arnot Robertson and opposed by Dr. Charles Hill and Miss Bronwen Lloyd-Williams.

Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Nov. 16, 5 p.m. *"Histopathology of the Skin,"* by Dr. I. Muende.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Nov. 16, 11 a.m., *"Visceral Syphilis,"* by Dr. E. G. B. Calvert; at St. Peter's Hospital, Henrietta Street, London, W.C., Nov. 16, 5 p.m., *"Aetiology, Pathology, and Symptoms of Benign Enlargement of the Prostate with Indications for Treatment,"* by Mr. F. J. F. Barrington.

LONDON UNIVERSITY.—At Westminster Medical School, Horseferry Road, London, S.W., Nov. 16, 5 p.m. *"Rubella in Pregnancy as an Aetiological Factor in Congenital Malformations and Stillbirths,"* special University Lecture by Dr. Charles Swan (University of Adelaide).

SCOTTISH EASTERN ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At B.M.A. Scottish House, 7, Drumsheugh Gardens, Edinburgh, Nov. 16, 8.45 p.m. *"Recent Work on the Toxaemias of Pregnancy,"* by Professor R. J. Kellar.

UNIVERSITY COLLEGE, Gower Street, London, W.C.—Nov. 16, 1.15 p.m. *"Psychology as a Science—I,"* by Dr. S. J. F. Philpott, D.Sc.

Wednesday

HARVEIAN SOCIETY OF LONDON.—At 26, Portland Place, London, W., Nov. 17, 8.15 p.m. *"The Value of a Tumour Clinic in a General Hospital,"* by Professor Ian Aird.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Nov. 17, 5 p.m. *"X-ray Technique,"* by Dr. C. W. McKenny.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Nov. 17, 11 a.m., *"General Paralysis of the Insane,"* by Dr. J. C. Hawksley; at St. Peter's Hospital, Henrietta Street, London, W.C., Nov. 17, 5 p.m., *"A Survey of the Different Methods of Treatment Available in Enlargement of the Prostate,"* by Mr. R. Ogier Ward.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—Nov. 17, 5 p.m. *"The Portraiture of William Harvey,"* Thomas Vicary Lecture by Mr. Geoffrey Keynes.

ROYAL INSTITUTE OF PHILOSOPHY.—At Eugenics Theatre, University College, Gower Street, London, W.C., Nov. 17, 7.30 p.m. *"State and Society,"* by W. H. Walsh, M.A.

ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE, 28, Portland Place, London, W.—Nov. 17, 3.30 p.m. *"Food—and Resistance to Disease,"* by Dr. P. G. H. Gell.

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C., Nov. 17, 5.30 p.m. *"The Royal Microscopical Society's Film Library."* Aims and scope to be described by Dr. A. F. W. Hughes.

Thursday

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—Nov. 18, 8 p.m. *"Angiocardiography as an Aid to Diagnosis of Cardiac Abnormalities,"* by Dr. F. Gardner. *"Cardiac Anatomy as Demonstrated by Angiocardiography,"* by Dr. J. M. Weston Wells.

DREADNOUGHT SEAMEN'S HOSPITAL, Greenwich, S.E.—Nov. 18, 3 p.m. Clinical demonstration by Mr. D. M. Cooper and Dr. R. L. Mansi.

EDINBURGH CLINICAL CLUB.—At B.M.A. Scottish House, 7, Drumsheugh Gardens, Edinburgh, Nov. 18, 8 p.m. *"Some Minor Orthopaedic Conditions,"* by Mr. W. V. Anderson.

EDINBURGH ROYAL INFIRMARY.—Nov. 18, 5 p.m. *"Blood Volume in Surgical Disorders,"* Honyman Gillespie Lecture by Professor W. C. Wilson.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Nov. 18, 11 a.m., *"Neurosyphilis,"* by Dr. A. H. Harkness; 5 p.m., *"Transvesical Operations on the Prostate,"* by Mr. W. K. Irwin.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, London, W.—Nov. 18, 5 p.m. Lloyd Roberts Lecture: *"Victorian Doctor,"* by Mr. J. Johnston Abraham.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN: DARTFORD AND DISTRICT BRANCH.—At Grammar School, West Hill, Dartford, Nov. 18, 8 p.m. *"d-Tubocurarine Chloride."* Wellcome film, including *"Sources and Isolation,"* by Dr. T. Dewing, Ph.D.; *"Standardization and Analytical Control,"* by Dr. G. E. Foster, Ph.D.; and *"Pharmacology,"* by Dr. F. Prescott, M.R.C.P. All members of B.M.A. and Royal Institute of Chemistry are invited to attend.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Nov. 18, 5 p.m. *"Tuberculous Enlargement of Intrathoracic Lymph Nodes and its Aftermath,"* Mitchell Lecture by Dr. Robert Coope.

ROYAL MEDICAL SOCIETY.—At Freemasons' Hall, George Street, Edinburgh, Nov. 18, 7.15 for 7.30 p.m. Presidents' annual dinner.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At School of Tropical Medicine, Pembroke Place, Liverpool, Nov. 18, 7.30 p.m. Laboratory meeting. Various demonstrations will be given.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—Nov. 18, 4.30 p.m. *"Neurology and Psychiatry,"* Lecture-demonstration by Dr. Anthony Feiling.

UNIVERSITY COLLEGE, Gower Street, London, W.C.—Nov. 18, 1.15 p.m. *"Psychology as a Science—II,"* by Dr. S. J. F. Philpott, D.Sc.

Friday

BRITISH TUBERCULOSIS ASSOCIATION.—At Royal Empire Society Hall, Northumberland Avenue, London, W.C., Nov. 19, 3.30 p.m. *"Tuberculosis—Some Statistical Problems,"* by Dr. Percy Stocks; *"Radio-sensitive Thoracic Tumours,"* by Professor B. W. Windeyer.

FACULTY OF RADIOLOGISTS.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., Nov. 19, 2.15 p.m. Diagnosis Section meeting. *"Angiocardiography in Congenital Heart Disease,"* by Dr. T. H. Hills.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330–2, Gray's Inn Road, London, W.C.—Nov. 19, 4.30 p.m. *"The End of an Era, A Retrospect and a Prospect,"* annual address by Mr. Walter Howarth.

LONDON CHEST HOSPITAL, Victoria Park, E.—Nov. 19, 5 p.m. *"Asthma,"* by Dr. J. R. B. Hern.

ROYAL INSTITUTE OF PHILOSOPHY.—At University Hall, 14, Gordon Square, London, W.C., Nov. 19, 5.15 p.m. *"Morality and Religion,"* by Dr. Kenneth Kirk.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—Nov. 19, 8 p.m. *"Medicine in the New Social Order,"* by Sir Francis Fraser.

Saturday

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Napsbury Hospital, near St. Albans, Herts, Nov. 20, 2.15 p.m. Meeting.

APPOINTMENTS

John Burke Ewing, M.D., C.M., F.R.C.S.Ed., F.R.C.S.Can., has been appointed Professor of Clinical Surgery at Ottawa University and Surgeon in Chief to Ottawa General Hospital.

Mr. Ewing is at present Surgeon to Wigan Royal Infirmary and is in charge of the surgical unit at Warrington General Hospital. He is a Canadian and qualified at Quebec University in 1932, obtaining the fellowship of the Edinburgh College of Surgeons in 1936 and of the Canadian College in 1937.

DOWNER, E. C., M.B., B.Ch., D.P.H., Medical Officer of Health for Barnsley.

JOHNSTON, W., M.B., Ch.B., Assistant Medical Officer of Health for Derry.

O'BRIEN, T. P., M.B., B.Ch., Assistant Medical Officer of Health for St. Helens.

OVENS, GERALD H. C., M.B., F.R.C.S., Professor of Clinical Surgery, Farouk I University, Alexandria, Egypt.

BIRTHS, MARRIAGES, AND DEATHS

BIRTH

Martin.—On Oct. 18, 1948, to Dr. Audrey Martin (née Dealler), wife of Peter Martin, 57, Narborough Road South, Leicester, a daughter.

MARRIAGES

McLaren—Evans.—On Oct. 23, 1948, in Edinburgh, Donald Stewart McLaren, M.B., Ch.B.Ed., to Olga Mair Evans.

Pilcher—Smedley.—On Oct. 30, 1948, at St. Mary's Church, Crich, Derbyshire, Richard Kendal Pilcher, M.C., M.R.C.S., L.R.C.P., D.O.M.S., to Elizabeth Margaret Smedley.

DEATHS

Ashe.—On Oct. 26, 1948, at Ryde House, Northenden Road, Sale, Cheshire, Charles Septimus Ashe, M.B., Ch.B.

Barton.—On Oct. 26, 1948, at 26, Willows Avenue, Lytham St. Annes, John Barton, M.R.C.S., L.R.C.P.

Bell.—On Nov. 1, 1948, James Adamson Bell, M.R.C.S., L.R.C.P., of 11, Higher Tower Road, Newquay, Cornwall, aged 81.

Bowie.—On Oct. 29, 1948, Margaret Campbell Bowie, M.R.C.S., L.R.C.P.

Brews.—On Oct. 28, 1948, at the London Hospital, Richard Vincent Brews, L.R.C.P.I., J.P., of 10, Pier Road, North Woolwich, E.

Bullmore.—On Oct. 29, 1948, in London, Edward Augustus Bullmore, F.R.C.S.Ed., of 1, Florence Place, Falmouth, and of North Brink, Wisbech, aged 73.

Cameron.—On Oct. 25, 1948, at Sheffield, Donald Hugh Cameron, M.B., Ch.B., D.P.M.

Dudley.—On Oct. 28, 1948, at Caxton, Cambs., Edward Percy Hughes Dudley, M.R.C.S., L.R.C.P., aged 74.

Huckett.—On Oct. 31, 1948, Alfred Edward Huckett, M.B., Ch.B.Ed., of King's Road, Doncaster.

Jeffares.—On Oct. 26, 1948, at Shanvalla, Ramsey, Isle of Man, James Jeffares, L.R.C.P.&S.Ed., L.R.F.P.S.Glas., late of Kegworth, Leicestershire, aged 75.

Mackinnon.—On Oct. 25, 1948, at 43, Hamilton Terrace, London, N.W., Donald Mackinnon, M.B., Ch.B.

Milburn.—On Oct. 27, 1948, Charles Henry Milburn, O.B.E., M.B., J.P., of 9, South Drive, Harrogate, Yorkshire, aged 88.

Mitchell.—On Oct. 26, 1948, at Bexhill, Ernest John Drum Mitchell, M.B., B.Ch.

Strong.—On July 4, 1948, in Boston, Mass., Richard Pearson Strong, C.B., M.D., Professor of Tropical Medicine, Harvard University, 1913 to 1938, aged 76.

Thomas.—On Nov. 2, 1948, at 1, Westend, Llanelly, Martin Phillips Thomas, M.R.C.S., L.R.C.P., aged 71.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Testing for Blood in Urine

Q.—*What is the best test for blood in urine? Please describe it in detail. Some laboratories use the pyamidon and others the guaiacum tests. Professor Sydney Smith in his "Forensic Medicine" (1945) recommends a solution of benzidine in glacial acetic acid and states that this solution keeps for long periods. I had a supply which changed to a port-wine colour after a few days. Will this affect the benzidine test?*

A.—There is no "best" test for blood, but there are several excellent tests each useful under appropriate conditions. To detect haematuria, as in following the course of nephritis, it is essential to centrifuge the urine and examine the deposit with a microscope. Hand centrifuges can still be obtained, and a pocket microscope magnifying 200 to 300 diameters is quite satisfactory and costs only a few pounds. To detect haemoglobinuria, on the other hand, it is best to use a hand spectroscope.

The chemical tests are convenient and require no special apparatus, so for that reason they are still used in domiciliary practice; but they are many times less sensitive than microscopical examination and sometimes give false positives. If it is possible to perform a microscopical examination, therefore, the chemical tests should not be used; the writer uses them so rarely that he does not keep any of the reagents made up. The benzidine test is about ten times more sensitive than any others, but it gives false positives with pus and iodides and with slight traces of dirt in tubes, so that it cannot be recommended. The pyramidon and guaiac tests are much less sensitive and give false positives only with iodides. The reduced phenolphthalein test is slightly more sensitive than the last two and gives few false positives. For these reasons the writer prefers the last, but uses the other two almost as frequently because they are much more convenient. Details of all three are therefore given.

Guaiac Test.—Ozonic ether, and an alcoholic solution of guaiacum resin prepared at the time of test by shaking a knife-point of the resin with 2 to 3 ml. of industrial spirit 74% over proof, are required. To 2 to 3 ml. of urine is added 2 to 3 drops of the guaiac solution; after mixing, 15 to 20 drops of ozonic ether are allowed to fall in and the tube is left to stand for a couple of minutes. A blue ring at the junction of the two liquids indicates blood or iodides. It is most important to use a freshly prepared solution of the resin; after a few days it becomes much less sensitive.

Pyramidon Test.—Test the urine with litmus paper, and if alkaline render it just acid with acetic acid. Add 1 drop of glacial, or the equivalent of dilute, acetic acid to 3 ml. of neutral or acid urine in a clean tube, and pour an equal volume of the amidopyrine solution gently down the side of the tube so that it forms a layer above the urine. Holding the tube vertical, allow 5 to 10 drops of 10-volume hydrogen peroxide to fall into it from a height of 6 to 8 in. (15 to 20 cm.). A blue colour at the junction of the solutions indicates the presence of blood or iodides.

Reduced Phenolphthalein Test.—The Kastle-Meyer reagent used is prepared by dissolving 2 g. of phenolphthalein and 20 g. of caustic potash in distilled water and boiling with 10 g. of zinc dust till the red colour disappears. After cooling, the solution is filtered and a few granules of the zinc dust are added to the filtrate to keep it reduced. This dust should settle to the bottom: if it does not, the solution must be filtered before use. To 2 to 3 ml. of reagent add 10 drops of hydrogen peroxide and 2 to 3 ml. of urine and shake. A red colour indicates blood. The reagent keeps moderately well, though becoming less sensitive. Should it become pink, it can be regenerated by adding a small quantity of zinc dust and boiling.

The writer has never kept benzidine dissolved in glacial acetic acid, and always prepares his own solutions from the components at the time of test. It is probable that old, coloured solutions are less sensitive than are fresh solutions, though they will still work.

Are Twins Sterile?

Q.—*There is a widespread idea in this area that if twins are of different sexes they are sterile. I had not heard this theory until a girl put it forward to "prove" she could not be pregnant. The local veterinary surgeon claims that in twin pregnancies in cattle, if the offspring are of different sexes they will be sterile if they have a common placenta. Can you comment on this?*

A.—In twin pregnancies in cattle anastomosis of the foetal circulations occurs seven times out of eight. Should the twin pair be of opposite sex the male hormones circulating in the female pervert the course of its differentiation, leading to a pseudo-intersex, which is sterile. The abnormality is not usually noticeable externally, so what has been observed by many generations of cattle-breeders is that a female born co-twin to a male is sterile seven times out of eight; the abnormal females are called free-martins. Of course there is no such mechanism in the human species, yet the occurrence of the phenomenon in cattle is responsible for a highly persistent superstition in regard to man—a superstition that one would have imagined was clearly disproved within the experience of almost everyone.

Penicillin in the Tropics

Q.—*What is the rate of deterioration of penicillin in the Tropics? Consignments here are exposed to temperatures averaging 80° F. (26.6° C.), and often running up to 100° F. (37.8° C.) for part of the day, for periods of from five days to three weeks. East African suppliers used to deliver in large vacuum containers, but they now send by parcel post, and state that "penicillin retains its stability without refrigeration up to the date of expiry in normal storage." Is this correct?*

A.—Penicillin of present-day purity will withstand the conditions described if kept perfectly dry. There need therefore be no anxiety about oil–wax suspensions (one of the most stable of all preparations, because moisture cannot penetrate it), or about powder in sealed tubes, or tablets and lozenges in unopened tubes with waxed corks. Creams, on the other hand, will retain their potency for any length of time only in a refrigerator, and could certainly not be relied on after even one week of tropical heat.

Cold Feet in Diabetes

Q.—*What is the cause of cold feet in a patient with diabetes mellitus?*

A.—If the complaint of cold feet is recent, atheroma of the arteries to the feet has developed. The diagnosis can be confirmed by feeling for pulsation in the dorsalis pedis and posterior tibial arteries, or by means of an oscillometer if the arteries cannot be felt. Treatment consists in keeping the feet warm by thick socks, or two pairs of well-fitting thin socks or stockings; the boots or shoes should be big enough to take the thick socks in comfort; tight garters should not be worn. One or two pairs of loose bedsocks should be worn at night. Hot-water bottles should not be used and the patient should not warm his feet in front of a fire. Gentle exercise and massage are useful.

Baker's Dermatitis

Q.—*What treatment do you recommend for baker's dermatitis? What is your opinion of the use of barrier creams in this connexion?*

A.—The causes of baker's dermatitis vary widely in different cases, and treatment depends on the cause. On the one hand the major factor may be the physiological instability of the skin in an eczema-prone subject, and at the other extreme the cause may be a specific allergic sensitiveness to one particular contact, such as a bleaching agent. The majority of cases arising in those who have been engaged in the trade for some years depend on the repeated injury occasioned by the sticking of dough to the skin and its removal. Barrier creams alone will rarely solve the problem, but where the dermatitis is due to sensitiveness to one or more particular ingredients they may

help, provided contact with the agent is reduced to a minimum. Psychological factors often play an important part in the aetiology of industrial dermatoses.

Transmissibility of Syphilis

Q.—*In a family of five the father has sero-positive syphilis and is undergoing treatment; the eldest child (8 years) has interstitial keratitis, joint changes, and is sero-positive. The mother has not had any treatment and yet is sero-negative (three Wassermann and Kahn tests at monthly intervals), and is without clinical evidence of syphilis, other than the fact that she gave birth to a congenital syphilitic child. The two youngest children (4 and 2 years) are without clinical evidence of syphilis and are sero-negative (three monthly Wassermann and Kahn tests. What treatment (if any) and what follow-up are recommended for the mother and the two apparently healthy children?*

A.—This is not an uncommon story. It seems certain that the mother had syphilis and communicated it to the eldest child, but as her infection grew older the chances of communicating it decreased and the youngest children apparently escaped; the interval between the births of the first and second child (4 years) might account for this. It is well known that the transmissibility of syphilis decreases with the passage of time, and serum reactions sometimes tend to reverse from positive to negative in the absence of treatment. No treatment is indicated for the mother and two youngest children at present, but periodical clinical examinations and serum tests would be a wise precaution; should the mother become pregnant again, treatment would ensure the birth of a non-syphilitic baby. It might be advisable to examine the mother's cerebrospinal fluid to exclude the possibility of asymptomatic neurosyphilis.

Cerebral Diplegia in a Child

Q.—*How should one treat cerebral diplegia in a child aged 2 years? She is developing a number of athetoid movements and has occasional convulsions.*

A.—Before planning the treatment it would be advisable in this case to know the extent of co-operation of the child. Often these children have a normal mental capacity but are backward because of their physical defect. The attitude of the parents and the possibility of additional training in the home are also important facts to assess. If both are satisfactory, then it is advisable to start treatment in a physiotherapy department where the mother can watch and gain instruction on management in the home. The treatment of athetosis consists essentially in teaching the child to relax his muscles voluntarily, and, when this aim has been attained, in re-education in movement. If the home conditions are poor and the parents uncooperative it may be advisable to arrange treatment at a special residential home later. The treatment of the convulsions is the same as for epilepsy.

Night Terrors

Q.—*A girl 3½ years old began having night terrors eight months ago. Within a few weeks they became severe and occurred almost nightly. Attempts to prevent them were unsuccessful until it was noticed that when she slept in the afternoon there was no "terror" that night. She had been accustomed to sleep in the afternoons, but the habit had lapsed; with a little difficulty it has been regained, and night terrors have almost ceased. They occur now, very mildly, about once a fortnight, and then only when she has not slept in the afternoon. She is otherwise well. She has a sister of 9 months, but no jealousy had been apparent until the last month, since when she has become rather "mummyish" and a little "negative" and occasionally seems to resent the baby. Are the terrors due simply to over-fatigue, or is there some underlying physical or psychological cause which shows itself in this way only when she is overtired? What can be done to eliminate them entirely?*

A.—Any disturbing change in the family situation, such as the birth of another child in this case, tends to evoke night terrors during the fourth year of life, which usually cease as the new situation becomes accepted. Until this solution is reached increased emotional tension induces physical fatigue, which in its turn leads to disturbance of sleep. This cycle of events is clear with this little girl, who repressed all natural jealousy of her younger sister and whose night terrors ceased when she slept during the day. As she is now showing openly her fear that the baby may absorb all her mother's love she will be able to get reassurance from being given some extra warmth of attention, and the outlook is favourable. The afternoon rest should be continued as long as possible. If she is not already at a nursery school it would be well to consider this, so that she may gain confidence through social contacts and the acquiring of skills with others of her own age and in this way become less dependent on the mother–child relationship. If she goes to a nursery during the day, no doubt her mother will make a pleasant fuss of her when she returns in the afternoons so that she will not feel in any sense cast out because of the baby.

Torn Tympanum

Q.—*What is the usual rate of healing of an ear-drum following traumatic rupture, no infection being apparent? The tear, which occurred three weeks ago, is considerable, nearly a quarter of the infra-posterior area being "missing." There is no apparent damage to the ossicles. Beyond "rolling" of the edges the tear shows little true healing.*

A.—A large tear may never heal, or the margin may become adherent to the promontory. Probably this tear will take some months to repair, provided infection does not supervene.

NOTES AND COMMENTS

Treatment of "Tennis Elbow."—Dr. J. R. ROBSON (Edgware, Middlesex) writes: Having had nine successful cases of "tennis elbow" this season I would like to add one or two comments to the reply under "Any Questions?" (Oct. 9, p. 699). In my experience physiotherapy is not only useless but in some cases aggravates the symptoms. The above cases had an injection of local anaesthetic in the point of maximum tenderness, followed by vigorous massage for about five minutes. They were then sent on to the courts for about an hour and were able to execute all movements without pain. I consider this last point of the utmost importance, as the patient is able to carry out all strokes without concentrating on any particular one. There was a mild local reaction the same evening which quickly responded to tab. codein. co. and heat. After four or five days they were able to resume normal play. Three other points are worthy of mention: (1) a large "grip" is desirable, thus diminishing the tension on the forearm muscles; (2) the body and shoulder should be brought into play rather than the elbow and wrist; (3) it is important to follow-through at all times.

Insurance Against Sickness.—The London Association for Hospital Services runs a non-profit-making scheme, which was initiated by the King Edward's Hospital Fund in collaboration with the hospitals and the B.M.A., to enable provision to be made for the expenses of medical and surgical treatment in hospital private wards or nursing-homes. The benefits available under the maximum schemes approximate to the hospital charges and fees specified by the Ministry of Health in the regulations on pay-bed accommodation. The London Association is sending a pamphlet outlining the scheme to members of the medical profession, and further particulars may be obtained from it at Tavistock House South, Tavistock Square, London, W.C.1.

Recurrent Parotitis.—Professor R. S. ILLINGWORTH (Sheffield) writes: In reply to the question concerning recurrent parotitis (Oct. 23, p. 767), I did not feel that your answer was entirely satisfactory. Many of these cases are due to *Str. viridans* or to the pneumococcus, and these organisms may be recovered from the duct. In one child whom I have under treatment at present and who has had eighteen to twenty attacks in all I have found that prophylactic "sulphamezathine" (0.5 g. per day) completely prevents the attacks. When I stopped the drug the attacks recurred. Penicillin lozenges did not prevent the attacks. The white cell count is done every fortnight.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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